



County of San Bernardino
F A S
STANDARD CONTRACT

FOR COUNTY USE ONLY

E	<input checked="" type="checkbox"/>	New	Vendor Code			Dept.		Contract Number	
M		Change							
X		Cancel							
County Department					Dept.	Orgn.	Contractor's License No.		
Information Services Department					ISD				
County Department Contract Representative					Ph. Ext.		Amount of Contract		
Angela Hillman (909) 388-5517							not to exceed \$3,975,000		
Fund	Dept.	Organization	Appr.	Obj/Rev	Source	Activity	GRC/PROJ/JOB Number		
IAJ	COD	COD	200	2445					
Commodity Code				Estimated Payment Total by Fiscal Year					
				FY	Amount	I/D	FY	Amount	I/D
Project Name									
GIS Parcel Basemap Project				2002/03					
				2003/04					

THIS CONTRACT is entered into in the State of California by and between the County of San Bernardino, hereinafter called the County, and

Name

Environmental Systems Research Institute, Inc.

Hereinafter called ESRI/Contractor

Address

380 New York Street

Redlands, CA 92373-8100

Phone

(909) 793-2853

Birth Date

n/a

Federal ID No. or Social Security No.

95-2775732

IT IS HEREBY AGREED AS FOLLOWS:

(Use space below and additional bond sheets. Set forth service to be rendered, amount to be paid, manner of payment, time for performance or completion, determination of satisfactory performance and cause for termination, other terms and conditions, and attach plans, specifications, and addenda, if any.)

AGREEMENT FOR GIS SERVICES: PARCEL MAPPING PROJECT

- 1) **GENERAL SCOPE.** Under this Agreement, ESRI agrees to provide GIS parcel basemap data, which meets the format and accuracy requirements set forth in Scope of Work, Exhibit A of this Agreement, for the COUNTY Information Services Department, ("ISD"). ESRI will provide the delivered data product for Assessor Map production for COUNTY. The data will be delivered in completed Assessor Book units and, upon passing QUALITY CONTROL review, will be accepted by the COUNTY. The project goal is to complete the GIS parcel basemap for the COUNTY.
- 2) **NOTICES.** Any notice or consent required or permitted to be given under this Agreement shall be given to the respective parties in writing, by first class mail, postage prepaid, or otherwise delivered as follows:

To COUNTY:

San Bernardino COUNTY Information Services Department
c/o Cindy Prescher, Project Leader
670 E. Gilbert Street
San Bernardino, CA 92415

To ESRI:

ESRI, Inc.
Project Notice—Attn: Susan M. Keith, Senior Contract Administrator
380 New York Street

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Legal Notice—Attn.: Contract Manager

Tel.: 909-793-2853, extension 1593

Fax: 909-307-3020

With a copy to Susan M. Keith, Senior Contract Administrator

or at such other address or to such other person that the parties may from time to time designate. Notices and consents under this section, which are sent by mail, shall be deemed to be received five (5) days following their deposit in the U.S. mail.

- 3) DEFINITIONS. Unless the context otherwise provides, for all purposes of this Agreement and all incorporated documents, the following terms defined have the meaning therein specified.

- A) ACCEPTANCE. Acceptance means the COUNTY's acceptance of the data and occurs only upon successful completion of QUALITY CONTROL by COUNTY.
- B) ACCEPTANCE CRITERIA. The quality and accuracy specifications that the data must meet as set forth in this Agreement.
- C) ACCEPTANCE DATE. The date on which the COUNTY accepts the data provided by ESRI.
- D) QUALITY CONTROL. The process of testing the data by the COUNTY to determine if it is in compliance with the data model specified in the Scope of Work and meets the accuracy requirements specified by this Agreement.
- E) WORKDAYS. County WORKDAYS, which exclude the following holidays: New Year's Day, Martin Luther King Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Eve and Christmas and any other days recognized as holidays by the COUNTY.

- 4) TERM. This Agreement shall be effective upon its execution by both ESRI and COUNTY. ESRI shall commence performance following such effective date and continue performance until completed, unless this Agreement is earlier terminated as provided herein.

- 5) ESRI'S RESPONSIBILITIES.

- A) SPECIFIC SERVICES: ESRI agrees to (a) provide services to COUNTY in accordance with the Scope of Work in Exhibit A, (b) certify that the data is ready for QUALITY CONTROL testing in accordance with Exhibit A, and (c) meet the ACCEPTANCE CRITERIA specified in Exhibit A.
- B) CONTRACTOR STAFFING REQUIREMENTS – PROJECT AUTHORITY. ESRI shall designate a representative to serve as the primary point of contact and who will have complete authority to act on ESRI's behalf. An alternative representative may be designated as well. ESRI shall notify the COUNTY when the primary contact will be unavailable/out of the office for five (5) or more WORKDAYS. ESRI or designee must respond to COUNTY inquiries within two (2) WORKDAYS. ESRI must notify the COUNTY in writing prior to making any key personnel changes throughout the duration of the project. ESRI must designate a project manager and technical lead for the duration of the project.
- C) CONTRACTOR STAFFING REQUIREMENTS – WORK SITE. ESRI will designate an ESRI employee assigned to the project who will perform twenty (20) hours minimum of work per week, or as mutually agreed otherwise, at the COUNTY's site of operation: Information Services Department, 670 East Gilbert Street, San Bernardino, California. The COUNTY will provide workspace, equipment and a phone for ESRI's use.
- D) PROJECT PLAN. ESRI will work with COUNTY and provide detailed project plans using Microsoft Project 2000 for the Pilot project and for the full-production project prior to beginning either phase.

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- E) **PROJECT COMMUNICATIONS.** Specific guidelines regarding communications during the project are addressed in Exhibit A. ESRI may provide an electronic project communication tool for consideration. The COUNTY utilizes Microsoft Outlook, Office, and Project 2000 application packages. ESRI must communicate and provide all required documentation utilizing compatible products.
- F) **INDEPENDENT CONTRACTOR:** In performance of the work, duties, and obligations assumed by ESRI under this Agreement, it is mutually understood and agreed that ESRI, including any and all of ESRI's officers, agents, and employees, will at all times be acting and performing as an independent contractor, and shall act in an independent capacity and not as an officer, agent, servant, employee, joint venture, partner, or associate of COUNTY. Furthermore, COUNTY shall have no right to control or supervise or direct the manner or method by which ESRI shall perform its work and function. However, COUNTY shall retain the right to administer this Agreement so as to verify that ESRI is performing its obligations in accordance with the terms and conditions thereof. ESRI and COUNTY shall comply with all applicable provisions of law and the rules and regulations, if any, of governmental authorities having jurisdiction over the subject matters thereof.

As an independent contractor, ESRI shall have absolutely no right to employment rights and benefits available to COUNTY employees. ESRI shall be solely liable and responsible for providing to, or on behalf of, its employees all legally required employee benefits. In addition, ESRI shall be solely responsible and hold COUNTY harmless from all matters relating to payment of ESRI's employees, including compliance with employment taxes, and all other matters related to employment. It is acknowledged that during the term of this Agreement, ESRI may be providing services to others unrelated to COUNTY or to this Agreement. ESRI may engage other independent contractor's to perform part of ESRI's obligations under this Agreement only with the written consent of COUNTY's representative. Management of and compensation for such independent contractors shall be the sole responsibility of ESRI.

- 6) **COMPENSATION TO ESRI.** As total consideration for the data, documents, and all other services to be provided by ESRI under this Agreement including reimbursables, ESRI shall be paid a total of US Dollars \$3,975,000. Billing shall be made by invoice, which shall include the contract number assigned by COUNTY and the work done in the billing period. Invoices shall be mailed to the address given in Section 3 **NOTICES**, above. COUNTY shall pay each invoice no later than thirty (30) days after receipt thereof. ESRI shall prepare and submit monthly invoices as follows:

For Assessor Books: Invoices will be based on the percentage of completion for each Assessor Book as of the end of the preceding month. In no event may ESRI invoice for more than 80% of the Book price prior to the COUNTY's acceptance of such Book, in accordance with the acceptance provisions of this Agreement. Upon COUNTY's acceptance of a Book, ESRI may invoice the remaining 20% of each Book price.

For all other Deliverables under this project: ESRI shall invoice based on the percent complete for each Deliverable as of the end of the preceding month.

- 7) **CHANGE ORDERS:** If COUNTY requests any changes to the Scope of the Work described in Exhibit A, or to any other aspect of this Agreement ESRI shall promptly give COUNTY a written statement of all costs for making the requested change, including without limitation materials, upgrades, and labor. The Change Order shall be in the form attached hereto as Exhibit B. If COUNTY approves such statement, such statement shall serve as an amendment to this Agreement which amendment shall be effective upon execution by COUNTY and ESRI.
- 8) **RECORDS, AUDIT, AND REVIEW.** COUNTY or any subdivision or appointee, thereof, and the State of California or any subdivision or appointee thereof, including the Auditor General, shall have absolute right to review and audit all project-related records, books, papers, documents, corporate minutes, and other pertinent items as requested, and shall have absolute right to monitor the performance of ESRI in the delivery of services provided under this Agreement. However, COUNTY's right to audit shall not extend to ESRI's confidential and proprietary overhead, general and administrative and/or profit percentages. ESRI shall give full cooperation in any auditing or monitoring conducted. ESRI shall cooperate with the COUNTY in the implementation, monitoring and evaluation of this Agreement and comply with any and all reporting requirements established by the COUNTY.

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Pursuant to the preceding paragraph, all records pertaining to services delivered and all fiscal, statistical and management books and records shall be available for examination and audit by COUNTY, Federal, and State representatives for a period of three years after final payment under the Agreement or until all pending COUNTY, State and Federal audits are completed, whichever is later. Project data shall be retained locally (in the County of San Bernardino) and made available upon request. The COUNTY shall provide a ten (10) business day written notice of an audit request. If said records are not made available at the mutually agreed upon scheduled monitoring visit, ESRI may, at COUNTY's option, be required to reimburse COUNTY for expenses incurred due to required rescheduling of monitoring visit(s). Records of ESRI that do not pertain to the project shall not be subject to audit unless provided for in another agreement.

- 9) **CONFLICT OF INTEREST.** ESRI shall make all reasonable efforts to ensure that no conflict of interest exists between its officers, employees or subcontractors and the COUNTY. ESRI shall not offer (either directly or through an intermediary) any improper consideration such as, but not limited to, cash discounts, service, the provision of travel or entertainment or any items of value to any officer, employee or agent of the COUNTY in an attempt to secure favorable treatment regarding qualification. ESRI shall make a reasonable effort to prevent employees, consultants, or members of governing bodies from using their positions for purposes that are, or give the appearance of being, motivated by a desire for private gain for themselves or others such as those with whom they have family, business, or other ties.

The COUNTY, by written notice, may immediately terminate any contract resulting from this application process if it determines that any improper consideration as described in the preceding paragraph was offered to any officer, employee, agent of the COUNTY with respect to the application and qualification process. The prohibition shall also apply to any amendment, extension or evaluation process once a contract has been awarded. In the event that the COUNTY determines that a conflict of interest situation exists, COUNTY may disallow any increase in costs associated with the conflict situation and such conflict may constitute grounds for termination of the Agreement.

ESRI shall immediately report any known attempt by a COUNTY officer, employee, or agent to solicit (either directly or through an intermediary) improper consideration from ESRI. The report shall be made to the supervisor or manager charged with supervision of the employee or to the County Administrative Office.

The provision shall not be construed to prohibit employment of persons with whom ESRI's officers, employees, or agents have family, business, or other ties so long as the employment of such persons does not result in increased costs over those associated with the employment of any other equally qualified applicant.

In the event of a termination under this provision, the COUNTY is entitled to pursue any available legal remedies.

- 10) **RESPONSIBILITIES OF COUNTY.** COUNTY shall provide all information reasonably necessary to ESRI in performing the services provided herein. COUNTY shall cooperate with ESRI to facilitate ESRI's performance and ESRI may be excused from performance for an amount of time equal to the delay, if any, caused by COUNTY. COUNTY shall provide its acceptance of ESRI's Deliverables no later than twenty (20) working days after receipt of a Deliverable.

- 11) **ACCEPTANCE.** Deliverables shall be categorized as follows:

- i. "DELIVERABLE ACCEPTED" means a Deliverable conforming to applicable Task in the Scope of Work with no more than minor nonconformities. COUNTY shall complete its acceptance review within ten (20) working days of receiving each Deliverable.
- ii. "DELIVERABLE REJECTED" means a Deliverable that fails to substantially conform to applicable Task in the Scope of Work. ESRI shall rework the Deliverable and resubmit it to COUNTY within fifteen (15) days, at which time COUNTY shall have ten (10) working days to rerun its acceptance review and reclassify the deliverable as either DELIVERABLE ACCEPTED or DELIVERABLE REJECTED.

COUNTY agrees it shall not use any Deliverable in its business operations before acceptance as described in Subsections (i) or (ii). If ESRI does not receive within twenty (20) working days after delivery written notice that the Deliverable is "ACCEPTED" or "REJECTED" in accordance with (ii) or (ii), or if COUNTY uses the Deliverable in its

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business operations, the Deliverable shall be deemed, as of the first to occur of either of these events, to have been accepted.

- 12) **OWNERSHIP OF DOCUMENTS.** COUNTY shall own and retain all rights, title and interest in all materials, documents data, products, graphics and reports produced in the course of performance under this Agreement upon production, whether or not completed including: all data collected not otherwise owned by a third party, all documents of any type whatsoever, and any material necessary for the practical use of the data and/or documents from the time of collection and/or production whether or not performance under this Agreement is completed or terminated prior to completion. ESRI shall not release or disclose any materials, documents, data products, graphics or reports under this section to third parties except after prior written approval of COUNTY. ESRI retains all rights in all methodology and techniques that it acquires during the course of this project.

No materials, documents, data, products, graphics, and reports produced in whole or in part under this Agreement shall be subject to copyright by ESRI or by ESRI's subconsultants in the United States or in any other country except as determined at the sole discretion of COUNTY. COUNTY shall have the unrestricted authority to publish, disclose, distribute, and other use in whole or in part, any reports, data, documents or other materials prepared under this Agreement.

- 13) **CONFIDENTIAL INFORMATION.** The parties hereto agree that all proprietary information disclosed by the other during performance of this Agreement, and identified as proprietary, shall be held in confidence and used only in the performance of this Agreement, unless such release is required by law. Each party will exercise the highest standard of care to protect the other's proprietary data from unauthorized disclosures.

For purposes of this Agreement, "Confidential Information" shall include not only information regarding COUNTY functions, but personal information related to the public or a portion of the public, if any, which COUNTY serves, for example, health care users, tax payers, and persons known to law enforcement agencies, including COUNTY attorneys and the courts.

- 14) **TAXES.** Deliverables provided for under this Agreement are quoted exclusive of all state, local, and other taxes or charges (other than income taxes payable by ESRI). In the event such taxes or charges become applicable to Deliverables, COUNTY shall pay any such taxes upon receipt of written notice that they are due. Except as stated in the previous two sentences, COUNTY shall not be responsible for paying any taxes on ESRI's behalf, including, but not be limited to, the following: FICA (Social Security), unemployment insurance contributions, income tax, disability insurance, and workers' compensation insurance for agents, officers, and employees of ESRI.

15) **TERMINATION.**

A) Termination by COUNTY. COUNTY may, by written notice to ESRI, terminate this Agreement in whole or in part at any time, whether for COUNTY's convenience or because of the failure of ESRI to fulfill the obligations herein. Upon receipt of notice and payment of all amounts owed, ESRI shall discontinue all services effected as stipulated in subsections (i) and (ii) below, (unless the notice directs otherwise), and deliver to COUNTY all data, estimates, graphs, summaries, reports, and all other records, documents or papers as may have been accumulated or produced by ESRI in performing this Agreement, whether completed or in process.

- i) For Convenience. COUNTY may terminate this Agreement upon thirty (30) days written notice. Following the notice period, ESRI shall promptly cease work and notify COUNTY as to the status of its performance. Notwithstanding any other provision of this Agreement, COUNTY shall pay ESRI for service performed to the date of termination to include a prorated amount of compensation due hereunder less payments, if any, previously made. In no event shall ESRI be paid an amount in excess of the full price under this Agreement nor for profit on unperformed portions of this Agreement. ESRI shall furnish to COUNTY such reasonable financial information as is necessary to determine the reasonable value of the services rendered by ESRI. In the event of a dispute as to the reasonable value of the services rendered by ESRI, the decision of COUNTY shall be final. The foregoing is cumulative and shall not affect any right or remedy which COUNTY may have in law or equity.

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- ii) For Cause. Should ESRI materially default in the performance of this Agreement or materially breach any of its provisions, COUNTY shall provide ESRI with a written notice requesting cure of said breach. If after thirty (30) days the breach is not cured, COUNTY may, at COUNTY's sole option, terminate this Agreement by written notice, which shall be effective upon receipt by ESRI. The foregoing is cumulative and shall not affect any right or remedy, which COUNTY may have in law or equity.
- iii) Due to Non-Appropriation of Funds. COUNTY's obligation is payable only and solely from funds appropriated for the purpose of this contract. All funds for payments after June 30th of the current fiscal year are subject to ISD budget approval for this purpose. Payments during subsequent fiscal periods are dependent upon the same action. In the event this Contract extends into succeeding fiscal periods, and if the governing body appropriating funds does not allocate sufficient funds for the next succeeding fiscal year's payments, then the affected services shall be terminated as of June 30th of the then current fiscal year. ISD shall notify CONTRACTOR in writing of such non-allocation at the earliest possible date.

B) Termination by ESRI. ESRI may terminate this Agreement for a material breach that is not cured within thirty (30) days of receipt by COUNTY of a notice specifying the breach and requiring its cure.

16) LIMITED WARRANTY.

- A) WARRANTY. ESRI warrants that for a period of thirty (30) days after acceptance of a Deliverable that the Deliverable will conform, in a manner consistent with professional and technical standards in the software industry, with applicable written specification included in the Scope or Work or delivered to COUNTY pursuant to this Agreement.
- B) DISCLAIMER. THE WARRANTY SET FORTH IN SECTION "A" OF THIS ARTICLE IS IN LIEU OF, AND THIS AGREEMENT EXPRESSLY EXCLUDES, ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ORAL OR WRITTEN, INCLUDING, WITHOUT LIMITATION, (i) ANY WARRANTY THAT DELIVERABLES ARE ERROR-FREE, WILL OPERATE WITHOUT INTERRUPTION, OR ARE COMPATIBLE WITH ALL EQUIPMENT AND SOFTWARE CONFIGURATIONS; AND (ii) ANY AND ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINTERFERENCE, SYSTEM INTEGRATION, AND NONINFRINGEMENT.

17) LIMITATION OF LIABILITY.

- A) Disclaimer of Certain Types of Liability. IN NO EVENT SHALL ESRI OR ITS LICENSOR(S) BE LIABLE TO COUNTY FOR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOST PROFITS; LOST SALES OR BUSINESS EXPENDITURES; INVESTMENTS; OR COMMITMENTS IN CONNECTION WITH ANY BUSINESS, LOSS OF ANY GOODWILL, OR FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR RELATED TO THIS AGREEMENT OR USE OF THE DELIVERABLES, HOWEVER CAUSED ON ANY THEORY OF LIABILITY AND WHETHER OR NOT ESRI OR ITS LICENSOR(S) HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. THESE LIMITATIONS SHALL APPLY NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY REMEDY.
- B) General Limitation of Liability. IN NO EVENT WILL ESRI'S TOTAL CUMULATIVE LIABILITY HEREUNDER, FROM ALL CAUSES OF ACTION OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, BREACH OF WARRANTY, MISREPRESENTATION, OR OTHERWISE, EXCEED THE AMOUNTS PAID TO ESRI BY COUNTY FOR THE CONTRACT VALUE FROM WHICH THE LIABILITY DIRECTLY AROSE.
- C) Applicability of Disclaimers and Limitations. COUNTY agrees that the limitations of liability and disclaimers set forth in this Agreement will apply regardless of whether COUNTY has accepted the Deliverables or any other product or service delivered by ESRI. The parties agree that ESRI has set its prices and entered into this Agreement in reliance upon the disclaimers and limitations set forth herein, that the same reflect an allocation of risk between the parties (including the risk that a contract remedy may fail of its essential purpose or cause consequential loss), and that the same form an essential basis of the bargain between the parties.

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- D) The limitations on liability stated in the foregoing subsections A and B shall not apply to damages incurred by the COUNTY to third party claims for death, bodily injury or property damage, arising out of ESRI's negligence or willful misconduct in the performance of this Agreement.

18) INDEMNIFICATION AND INSURANCE.

A) INDEMNIFICATION. ESRI agrees to indemnify, defend and hold harmless the COUNTY and its authorized officers, employees, agents and volunteers from any and all claims, actions, losses, damages and/or liability arising directly from ESRI's negligent acts or willful misconduct of any person and for any costs or expenses incurred by the COUNTY on account of any claim thereof, except where such indemnification is prohibited by law.

B) INSURANCE COVERAGE.

- i) Without in any way affecting the indemnity herein provided and in addition thereto, ESRI shall secure and maintain throughout the Agreement the following types of insurance with limits as shown:

a) Workers' Compensation - A program of Workers' Compensation insurance or a State-approved Self-Insurance Program in an amount and form to meet all applicable requirements of the Labor Code of the State of California, including Employer's Liability with \$250,000 limits, covering all persons providing services on behalf of the Contractor and all risks to such persons under this Contract.

If Contractor has no employees, it may certify or warrant to County that it does not currently have any employees or individuals who are defined as "employees" under the Labor Code and the requirement for Workers' Compensation coverage will be waived by the County's Risk Manager.

With respect to Contractors that are non-profit corporations organized under California or Federal law, volunteers for such entities are required to be covered by Workers' Compensation insurance. If the County's Risk Manager determines that there is no reasonably priced coverage for volunteers, evidence of participation in a volunteer insurance program may be substituted.

b) Comprehensive General and Automobile Liability Insurance - This coverage to include contractual coverage and automobile liability coverage for owned, hired and non-owned vehicles. The policy shall have combined single limits for bodily injury and property damage of not less than one million dollars (\$1,000,000).

c) Errors and Omission Liability Insurance – Combined single limits of \$1,000,000 for bodily injury and property damage and \$3,000,000 in the aggregate or Professional liability insurance with limits of at least \$1,000,000 per claim or occurrence.

ii) Additional Named Insured. All policies except for the Workers' Compensation, Errors and Omissions and Professional Liability policies shall contain additional endorsements naming the COUNTY and its officers, employees, agents and volunteers as additional named insured with respect to liabilities arising out of the performance of services hereunder.

iii) Waiver of Subrogation Rights. Except for the Errors and Omissions, Liability and Professional Liability, Contractor shall require the carriers of the above required coverage's to waive all rights of subrogation against the COUNTY, its officers, employees, agents, volunteers, contractors and subcontractors. All policies required above are to be primary and non-contributory with any insurance or self-insurance programs carried or administered by the COUNTY.

iv) Proof of Coverage. Contractor shall immediately furnish certificates of insurance to ISD, the COUNTY Department administering the Contract, evidencing the insurance coverage, including endorsements, above required prior to the commencement of performance of services hereunder. The certificates shall provide that such insurance shall not be terminated or expire without thirty-(30) days written notice to the Department. Contractor

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shall maintain such insurance from the time Contractor commences performance of services hereunder until the completion of such services. Within sixty (60) days of the commencement of this Agreement, the Contractor shall furnish certified copies of the policies and all endorsements.

- v) **Insurance Review.** The above insurance requirements are subject to periodic review by the COUNTY. The COUNTY's Risk Manager is authorized but not required to reduce or waive any of the above insurance requirements whenever the Risk Manager determines that any of the above insurance is not available, is unreasonably priced or is not needed to protect the interests of the COUNTY. In addition, if the Risk Manager determines that heretofore unreasonably priced or unavailable types of insurance coverage or coverage limits become reasonably priced or available, the Risk Manager is authorized but not required to change the above insurance requirements, to require additional types of insurance coverage or higher coverage limits provided that any such change is reasonable in light of past claims against the COUNTY, inflation or any other item reasonably related to the COUNTY's risk.

Any such reduction or waiver for the entire term of the Agreement and any change requiring additional types of insurance coverage or higher coverage limits must be made by amendment to this Agreement. Contractor agrees to execute any such amendment within thirty (30) days of receipt.

- vi) **Failure to Procure/Show Proof of Insurance.** Failure on the part of any contractor to procure or maintain the required insurance shall be considered a material breach of contract upon which the County may immediately terminate this agreement or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, and all monies so paid by the County shall be repaid by the contractor to the County upon demand or the County may offset the premiums against any monies due to the contractor from the County.

- 19) **RELEASE OF INFORMATION.** No news releases, advertisements, public announcements or photographs arising out of this Agreement or ESRI's relationship with COUNTY may be made or used without prior written approval of the COUNTY.
- 20) **ASSIGNMENT.** Neither party shall assign any of its rights or transfer any of its obligations under this Agreement without the prior written consent of the other party and any attempt to so assign or so transfer without such consent shall be void and without legal effect and shall constitute grounds for termination.
- 21) **SECTION HEADINGS.** The headings of the several sections, and any table of contents appended hereto, shall be solely for convenience of reference and shall not affect the meaning, construction or effect hereof.
- 22) **SEVERABILITY.** If any one or more of the provisions contained herein shall for any reason be held to be invalid, illegal or unenforceable in any respect, then such provision or provisions shall be deemed severable from the remaining provisions hereof, and such invalidity, illegality or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
- 23) **REMEDIES NOT EXCLUSIVE.** No remedy herein conferred upon or reserved to either party is intended to be exclusive of any other remedy or remedies, and each and every such remedy, to the extent permitted by law, shall be cumulative and in addition to any other remedy given hereunder or now or hereafter existing at law or in equity or otherwise.
- 24) **NO WAIVER OF DEFAULT.** No delay or omission of either party to exercise any right or power arising upon the occurrence of any event of default shall impair any such right or power or shall be construed to be a waiver of any such default or an acquiescence therein; and every power and remedy given by this Agreement to either party shall be exercised from time to time and as often as may be deemed expedient in the sole discretion of the party exercising such right.
- 25) **ENTIRE AGREEMENT AND AMENDMENT.** In conjunction with the matters considered herein, this Agreement contains the entire understanding and agreement of the parties following discussion and negotiation and neither party shall suffer a legal disability on account of document drafting and other preparation. There have been no promises, representations, agreements, warranties or undertakings by any of the parties, either oral or written, of any character or

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nature hereafter binding except as set forth herein. This Agreement may be altered, amended or modified only by an instrument in writing, executed by the parties to this Agreement and by no other means. Each party waives their future right to claim, contest or assert that this Agreement was modified, canceled, superseded, or changed by any oral agreements, course of conduct, waiver or estoppel. ESRI's Master Service Agreement #2002C1607 entered into between ESRI and COUNTY on May 21, 2002 is not a part of this agreement.

- 26) SUCCESSORS AND ASSIGNS. All representations, covenants and warranties set forth in this Agreement, by or on behalf of, or for the benefit of any or all of the parties hereto, shall be binding upon and inure to the benefit of such party, its successors and assigns.
- 27) COMPLIANCE WITH LAW. ESRI shall, at their sole cost and expense, comply with all COUNTY, State and Federal ordinances and statutes now in force or which may hereafter be in force with regard to this Agreement. The judgment of any court of competent jurisdiction, or the admission of ESRI in any action or proceeding against ESRI, whether COUNTY is a party thereto or not, that ESRI has violated any such ordinance or statute, shall be conclusive of that fact as between ESRI and COUNTY.
- 28) VENUE. The venue of any action or claim brought by any party to this Agreement will be the Central District Court of San Bernardino County. Each party hereby waives any law or rule of the court, which would allow them to request or demand a change of venue. If any action or claim concerning this Agreement is brought by any third-party and filed in another venue, the parties hereto agree to use their best efforts to obtain a change of venue to San Bernardino County.
- 29) ATTORNEY FEES AND COSTS. Both parties agree to bear its own attorneys' fees and costs regardless of which party prevails in the event of a contractual dispute and not charge or recoup such fees from the non-prevailing party.
- 30) JURY TRIAL WAIVER. ESRI and COUNTY hereby waive their respective rights to trial by jury for any cause of action, claim, counterclaim, or cross-complaint in any action, proceeding, and/or hearing brought by either ESRI against COUNTY or COUNTY against ESRI on any matter arising out of, or in any way connected with this Agreement, the relationship of ESRI and COUNTY, or any claim of injury or damage, or the enforcement of any remedy under any law, statute, or regulation, emergency or otherwise, now or hereafter in effect.
- 31) CONTRACT COMPLIANCE/EQUAL OPPORTUNITY. ESRI agrees to comply with the provisions of the Equal Opportunity Program of the County of San Bernardino as well as Executive Order 11246, as amended by Executive Order 11375, 11625, 12138, 12432, 12250, Title VII of the Civil Rights Act of 1964 (and Division 21 of the Department of Social Services Manual of Policies and Procedures and California Welfare and Institutions Code, Section 1000), the California Fair Employment and Housing Act, and other applicable Federal, State, and County laws, regulations and policies relating to equal employment or social services to welfare recipients, including laws and regulations hereafter enacted. Contractor shall not unlawfully discriminate against any employee, applicant for employment, or service applicant or recipient on the basis of race, national origin or ancestry, religion, sex, marital status, age, political affiliation or disability.
- 32) FORMER COUNTY OFFICIALS. ESRI agrees to provide information on former County of San Bernardino administrative officials who are employed by or represent ESRI. The information provided must include a list of former county administrative officials who terminated county employment within the last five years and who are now officers, principals, partners, associates or members of the business. Must also include the employment and/or representative capacity and the dates these individuals began employment with or representation of your business. For purposes of this section, "county administrative official" is defined as a member of the Board of Supervisors or such officer's staff, County Administrative Officer or member of such officer's staff, county department or group head, assistant department or group head, or any employee in the Exempt Group, Management Unit or Safety Management Unit.
- 33) AUTHORITY. All parties to this Agreement warrant and represent that they have the power and authority to enter into this Agreement in the names, titles and capacities herein stated and on behalf of any entities, persons, or firms represented or purported to be represented by such entity(ies), person(s), or firm(s) and that all formal requirements necessary or required by any state and/or federal law in order to enter into this Agreement have been fully complied with.

Auditor/Controller-Recorder Use Only

<input type="checkbox"/> Contract Database	<input type="checkbox"/> FAS
Input Date	Keyed By

Furthermore, by entering into this Agreement, ESRI hereby warrants that it shall not have breached the terms or conditions of any other contract or agreement to which ESRI is obligated, which breach would have a material effect hereon.

34) INTEGRATION OF EXHIBITS: The following Exhibits attached to this Agreement are made a part of this Agreement:

Exhibit A: Scope of Work

Exhibit B: Data Change Order

In the event of conflict between the provisions contained in the numbered sections of this Agreement and the terms contained in the Exhibits, the provisions of the Exhibits shall prevail over those in the numbered sections.

35) INACCURACIES OR MISREPRESENTATIONS. If in the course of the administration of this Agreement, the COUNTY determines that ESRI has made a material misstatement or misrepresentation or that materially inaccurate information has been provided to the COUNTY, this Agreement may be immediately terminated. In the event of a termination under this provision, the COUNTY is entitled to pursue any available legal remedies.

IN WITNESS WHEREOF, this Agreement is signed by a fully authorized representative of each party with the intent to be bound and effective on the date executed by the last signatory hereto.

COUNTY OF SAN BERNARDINO

►

Fred Aguiar, Chairman, Board of Supervisors

Dated _____

SIGNED AND CERTIFIED THAT A COPY OF THIS DOCUMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD.

Clerk of the Board of Supervisors of the County of San Bernardino.

By _____
Deputy

Approved as to Legal Form

►

County Counsel

Date _____

Reviewed as to Affirmative Action

►

Date _____

ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE, INC.
(State if corporation, company, etc.)

By ► _____
(Authorized Signature)

Dated _____

Title _____

Address _____

Reviewed for Processing

►

Agency Administrator/CAO

Date _____

Auditor/Controller-Recorder Use Only

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Input Date	Keyed By

Exhibit A – Scope of Work

This section presents the technical scope of work and the work plan for the Parcel Mapping Project. Sections A.1 and A.2 present the technical methodology that will be implemented by the ESRI project team to meet the County's technical requirements for the two types of services. The technical methodology as outlined in Sections A.1 and A.2 reflects ESRI's current understanding of the County's requirements and our best assessment of how to meet or exceed these requirements. However, the technical methodology presented here is subject to modification based on additional information that becomes available as the project progresses. Additional technical information not addressed specifically in Sections A.1 and A.2 is presented in Section A.3.

The project work plan, presented in Section A.4, describes the specific tasks that will be undertaken to complete the project, the ESRI deliverables to be provided for each task, and the County responsibilities associated with each task.

Section A.5 presents the quality control plan to be implemented for the project as well as acceptance criteria specifications and specifics of the data review process.

Section A.6 presents various assumptions not contained elsewhere in the scope of work.

Section A.7 addresses the project schedule.

A.1 Service Type 1 -New Parcel Automation

This section presents a detailed description of ESRI's technical methodology for the first of the two service types, the automation of 480,000 new parcels from tract maps, parcel maps, and other sources. This process represents the bulk of the effort to complete the County's parcel basemap.

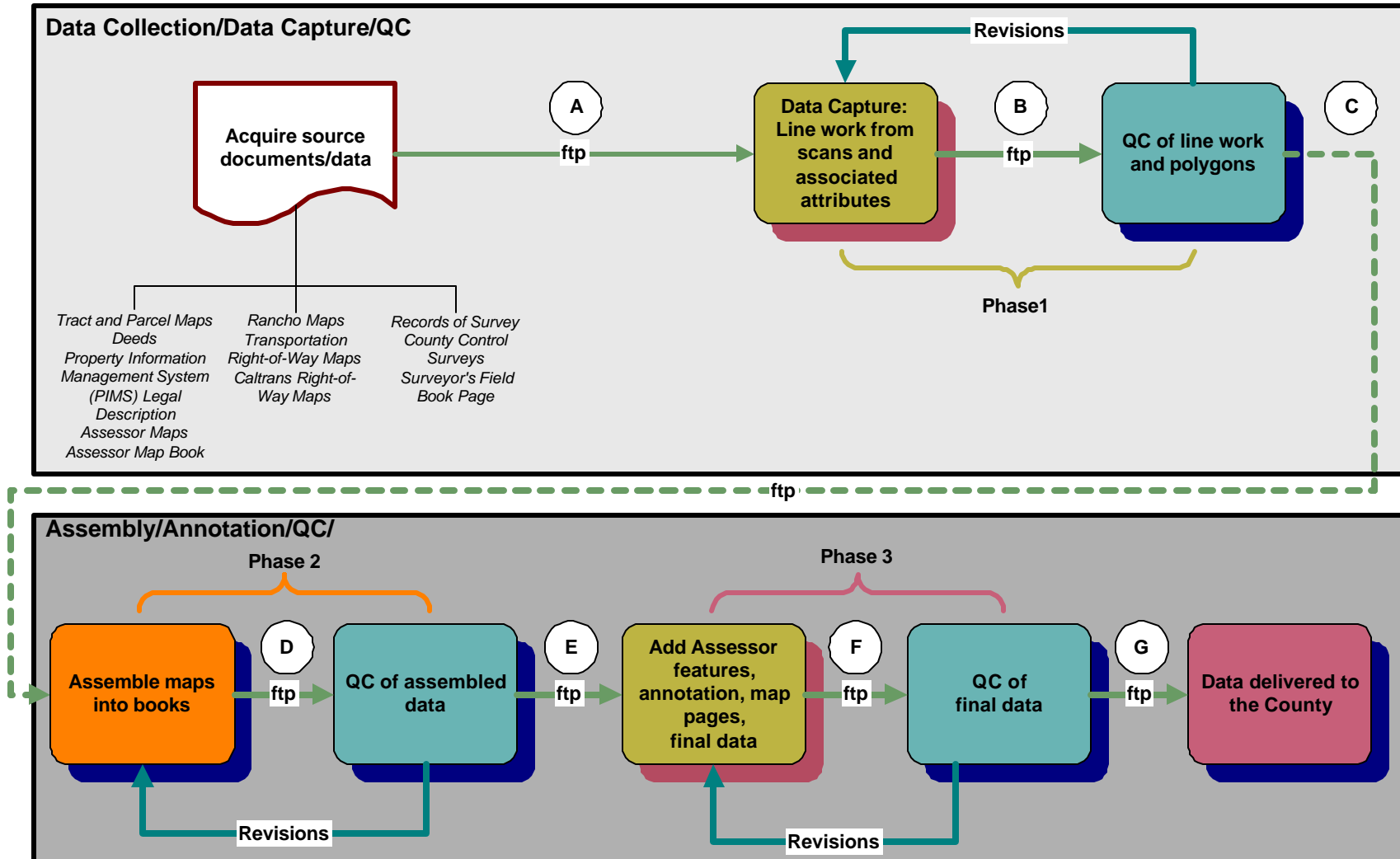
A.1.1 Overview of Technical Methodology

The technical methodology to be implemented for the project consists of three general phases.

- Digitize Line work Using Coordinate Geometry
- Assemble and Spatially Adjust Data
- Add Assessor Features

Figure A-1 presents an overview of the technical methodology for automation of the 480,000 parcels.

Figure A-1
Overview of Technical Methodology

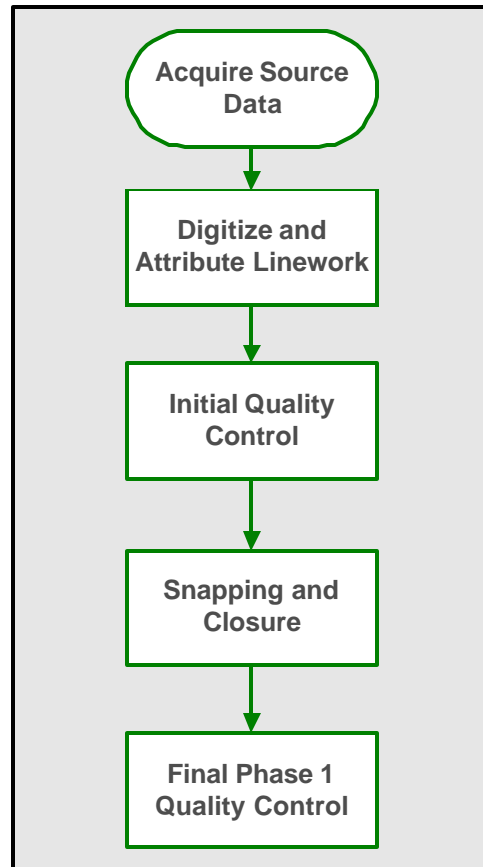


The methodology described herein is subject to change as a result of new information that becomes available once the project has begun or as a result of improvements to procedures and tools during and after the pilot project.

A.1.2 Phase 1—Digitize Line Work Using Coordinate Geometry

The focus of the first phase of production is the capture of all features that are to be collected from the tract and parcel maps or from deeds in unplatted areas. For the most part, this will include digitizing of cadastral line work from the tract and parcel maps using the coordinate geometry information provided on the maps. In addition, other features present on the tract and parcel maps will be captured at this time including right-of-way centerlines, railroad lines, street names, and label points. The major steps included in Phase 1 are shown in Figure A-2 below.

Figure A-2
Phase 1—Digitize Line Work Using Coordinate Geometry



A.1.2.1 Acquire Source Data

The following source data will be provided by the County. The bulk of the source data will be provided in digital form. The sources to be provided by the County are itemized below.

- GPS Control Point Database—file format to be determined by the County and ESRI
- Land Records Assessment briefings for each assessor book area
- Subdivision Tract Maps—TIFF images
- Parcel Maps—TIFF images
- Property Information Management System (PIMS) Legal Descriptions—Internet download
- Records of Survey—TIFF images
- County Surveyor's field books for each control point—TIFF images
- Assessor Map Book Pages—PDF format
- Surveyor's Wall Maps—TIFF images (if required)
- County Surveyor Maps—Photocopies and blue line drawings (if required)
- Official Maps—TIFF images (if required)

ESRI's Database Services Department has developed a Materials Control Program (MCP) to ensure the proper handling, placement, storage, distribution and tracking of materials for all database development projects in order to maintain schedules and produce quality products.

Upon initial receipt of materials, records of each source are entered into a secure Materials Control System Database for the specified project. Each piece of source is assigned a unique barcode number or inventory ID number for proper recall. All inventory is recorded by title, description, quantity, date of receipt, and origination of source. A history of sent and received data is logged for every action; this is optimal to track a piece of source's exact disposition.

Once a piece of source has been entered into the MCS Database it is stored in a secure/designated storage space. Sensitive hard-copy source is stored in a locked storage space and softcopy source on a Windows password protected server.

The primary mechanism for the transfer of the source data from the County to ESRI will be FTP transfer. ESRI maintains an FTP site that supports the secure transfer of data between ESRI and its customers. A secure, password-protected FTP location will be established for the San Bernardino County Parcel Mapping Project. Access to this location will be strictly limited to project personnel who require access to the site. The password will be supplied to the County's project manager who will control access to the site for County personnel.

Upon receipt of the digital data, ESRI will catalog the data, notify the County in writing of any missing data, and organize the data on an internal ESRI server that will be dedicated to the project. Access to the data will be strictly controlled and limited to ESRI personnel who are involved with the project. No other access to the data will be allowed without the consent of the County project manager.

Source data that is distributed to ESRI team members will be similarly protected. ESRI will require its subcontractors to control access to the data and ensure that it is used only for purposes of the project.

A.1.2.2 Digitize and Attribute Line Work

The proposed methodology for digitizing and attributing line work from the tract and parcel maps has been used in large production projects and provides a powerful combination of efficiency and accuracy that will meet or exceed that County's requirements for accuracy. The technical process described herein is subject to change if additional efficiencies can be achieved without any compromise of accuracy.

ESRI's approach to digitizing linework using coordinate geometry will make use of tools that ESRI considers to be the most efficient for its production process and that meet or exceed the County's accuracy requirements. Early in the project, the ESRI team will demonstrate its methodology to County staff and will respond to any issues regarding the methodology that are raised by the County. The pilot project described in Section A.4.2 will represent a thorough test of the methodology and will be the primary opportunity for the ESRI team and the County to evaluate and refine the technical methodology.

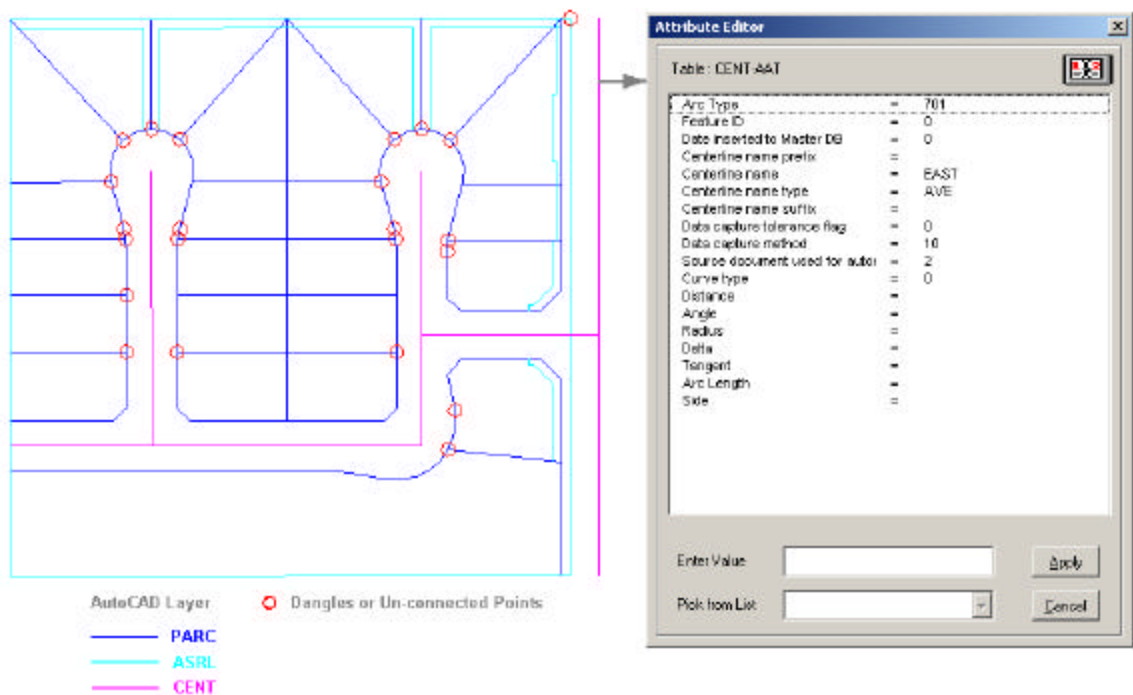
Digitizing of line work from the tract and parcel maps will take place in a nonspecific coordinate space; that is, the coordinates will not be referenced to a specific coordinate system or projection but will be maintained in units of feet. The data will be moved into the State Plane Coordinate System as part of the assembly process in Phase 2.

Initially, the traverse defining the perimeter of the subdivision will be constructed and the closure for the document will be determined. A closure report will be prepared for each map document at this time.

The required closure tolerance for the project document is defined as the larger of either 1 part in 10,000 or .05 feet. This tolerance coincides with the maximum allowable closure error for surveys in the State of California. If the closure is within this tolerance, the Closure Report will be completed and submitted. If the closure error exceeds this tolerance, the ESRI team will attempt to resolve the excessive closure error through consultation with its surveyor. If escalation is required, an Error Report will be prepared and submitted to the County. Escalation procedures are outlined in Section A.3.1.4 of this scope of work.

Once the closure of each document has been established to be within specifications, the remaining line work will be constructed (Figure A-3). Initially, line segments will be constructed individually and will not be snapped in order to retain the COGO attributes on each segment. Lines will be attributed with values for ARCTYPE, TOLERANCE_FLAG, PROCEDURE_CODE, SOURCE_CODE, and CVTYPE as they are digitized. CVTYPE is a flag to identify curved lines and will be populated with 0 for straight lines and 1 for curved lines. The curve type attribute is an internal attribute that will be used to associate the appropriate COGO attributes to lines and curves since they are different. The curve type attribute will be deleted before the data is delivered to the County.

Figure A-3
Constructed Line Work With Associated Attributes



Street and railroad centerlines will be constructed and attributed with the appropriate attribute values as determined from the map. Other line work, such as easements, will also be captured and attributed at this time if available from the tract and parcel maps.

The tract and parcel maps are one of two main sources for street name information. The Assessor map pages are the primary source of street names. ESRI will compare the street names appearing on the tract maps to those appearing on the assessor maps and, if they are different, will use the alternate name field in the centerline coverage to store it.

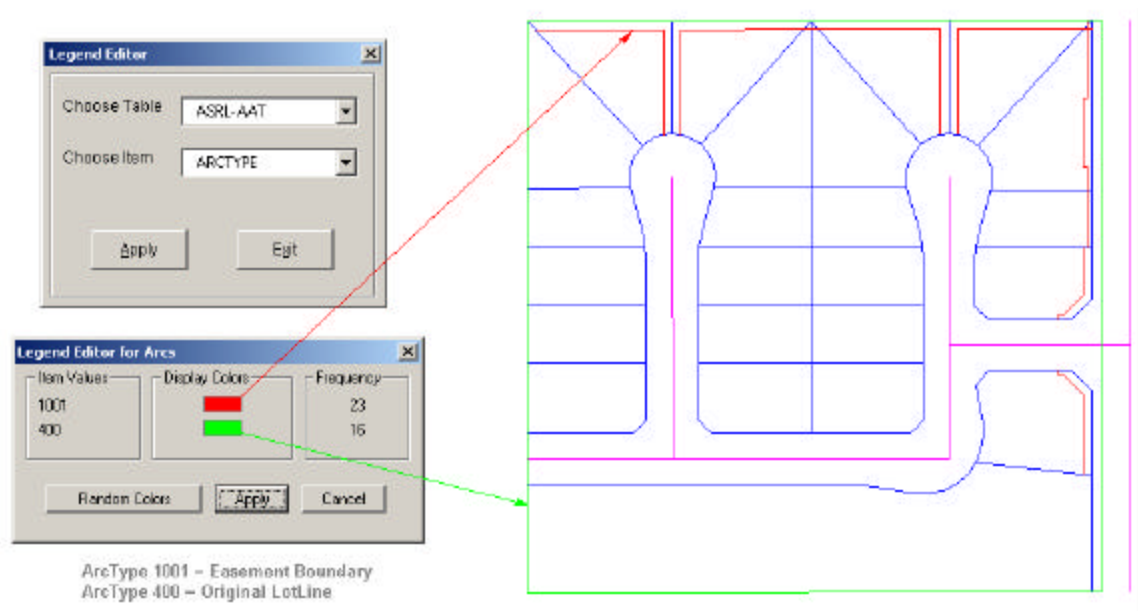
In unplatted areas, PIMS will be the primary source of data for construction of the line work. Any required research into supporting data sources to determine the geometry in unplatted areas will be the responsibility of the County. The County will provide some deeds on CD to supplement the information from PIMS to support construction of parcels in unplatted areas.

A.1.2.3 Initial Quality Control

When digitizing and attribution of the line work has been completed, initial quality control check will be performed to ensure that the line work has been constructed correctly using the COGO information and correct attribute values have been associated with each line segment.

An on-screen consistency check (Figure A-4) is performed wherein digitized line work will be color-coded based on the populated attribute values to check for consistency. Errors or inconsistencies identified during this QC check will be corrected and verified before moving to the next step.

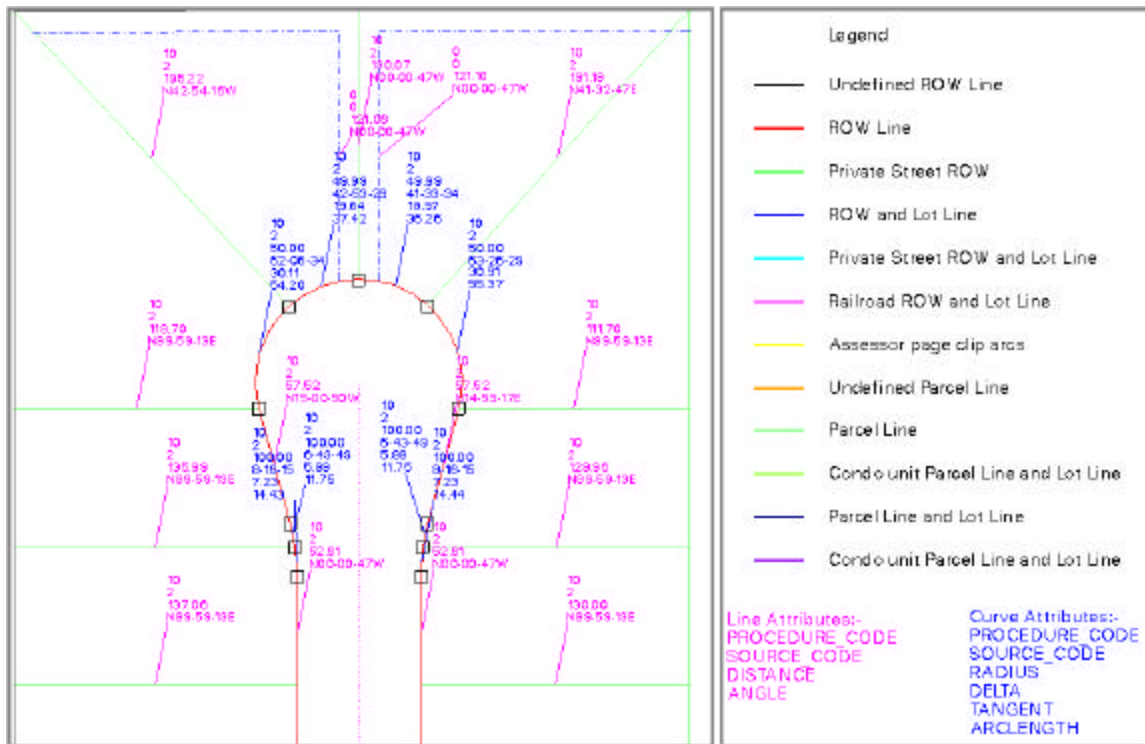
Figure A-4
On-Screen Verification of Line Attribute Coding



In addition to the on-screen consistency check, QC plots will be generated using color to distinguish between different ARCTYPE values (Figure A-5). The COGO attributes will be displayed as labels using the overposting capabilities of ArcInfo's ArcPlot module. Dangles (unsnapned endpoints) will be displayed so the lines can be snapped in a subsequent step.

In addition to the visual approaches to QC, automated checks will be run using ESRI's QCView software. QCView is described in detail in Section A.5 of the scope of work.

Figure A-5
Verification Plot With COGO Attributes and Line Coding



Attributes such as ARCTYPE, DISTANCE, ANGLE (bearing), RADIUS, DELTA, TANGENT, and ARCLENGTH will be compared with the values on the original source map. Errors will be annotated on the plot and corrected.

A.1.2.4 Snapping and Closure

Having completed the construction and attribution of line work, the next step will be to perform snapping of all line work and closure of polygons. Each misclosure of the original line work will be evaluated against the accuracy tolerances. Closure errors exceeding the tolerances will be investigated by the ESRI surveyor. If escalation is necessary, an Error Report will be submitted.

The Web-based Problem and Resolution database will be used to supplement or replace the Error Report.

A.1.2.5 Final Phase 1 Quality Control

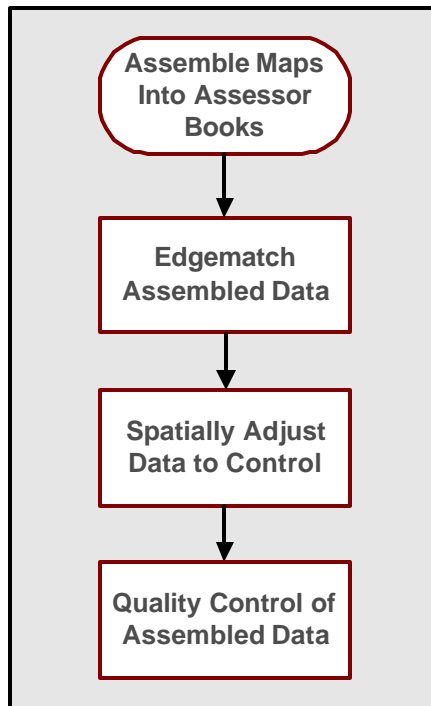
Once all line work has been snapped and errors have been resolved, a final QC check will be performed on the line work. This check will consist of producing a checkplot that contains the COGO attributes and the line attribute coding as shown in Figure A-4. The final Phase 1 QC check will be performed both by the subcontractor who has digitized the line work and by the independent QC subcontractor who is a part of the ESRI team.

Any errors identified in the line work will be corrected before moving forward with the assembly and adjustment process in Phase 2.

A.1.3 Phase 2—Assemble and Spatially Adjust Data

Phase 2 of the technical process encompasses the important steps of assembling the individual tract and parcel maps into larger units based on Assessor map books, edgematching adjacent maps within these large units, and spatially adjusting the assembled data to the County's control network. The major steps included in Phase 2 are illustrated in Figure A-6 below.

Figure A-6
Phase 2—Assemble and Spatially Adjust Data



Because of the importance of the assembly process and the potential for issues requiring surveyor input to resolve, ESRI will perform the assembly process locally in San Bernardino at the offices of ESRI team member Nobel Systems. Nobel is located several blocks from the County Surveyor's Office at the Department of Public Works. This close proximity between the Surveyor and the ESRI team will facilitate contact between the County and ESRI teams in resolving assembly issues.

The ESRI team includes several registered California land surveyors who will participate in the development of procedures for the assembly process and will support the process for the duration of the project on an as-needed basis. ESRI's surveyor support is local and will be available as required.

Given the complexities associated with the assembly and adjustment process and the County's familiarity with its map data and mapping control, ESRI strongly believes that this phase of the project must be a collaborative effort between County staff and the ESRI team. The County will ensure that a technical contact from the Survey Division is available on an as-needed basis to assist the ESRI team in resolving issues during this critical phase of the project.

A.1.3.1 Assemble Maps Into Assessor Books

Assembly of individual tract and parcel maps, or parcels derived from legal descriptions in unplatted areas, into units corresponding to assessor map books is a critical operation in the project. The assembly process requires an understanding of survey principles, the County's accuracy requirements, data quality issues as documented in the land records assessment briefings to be provided by the County, the capabilities of the software being used to perform the assembly, and basic good judgment.

The general philosophy of the assembly process will be to begin with digital data from tract and parcel maps that is considered to be of the best quality (most accurate) and to build upon these. A key goal of the process will be to localize any error to prevent its propagation beyond an individual map.

A rough estimate indicates that there are, on average, approximately 60 maps in an assessor book. Assembly of the data into map books will take place in arbitrary rectangular coordinate space that is not defined by a particular projection

A.1.3.2 Edgematch Assembled Data

Edgematching between adjacent tract and parcel map data will be performed as part of the assembly process. Once the data has been assembled, edgematching will be performed in compliance with the tolerance of .001 feet. The edge matching process will be largely a manual process but tools and menus will be used to automate the process to the extent possible.

ESRI will be responsible for edgematching within map book boundaries and between map book boundaries in areas in which data in both books is newly automated. However, the County will be responsible for edgematching between newly automated books and books that have previously been completed by the County.

A.1.3.3 Spatially Adjust Data to Control

In the spatial adjustment process, the data that has been assembled into map books will be georeferenced to the California State Plane Coordinate System, Zone 5, NAD83, EPOCH 1992.88 using the control points provided by the County.

Prior to performing the first spatial adjustment, ESRI will import the control points provided by the County. Most of the control has been developed using GPS and has an accuracy of 1 in 50,000 (1:50,000).

During the pilot phase of the project (Section A.4.2.7), the ESRI team's surveyors will conduct an assessment of the control provided by the County to determine its adequacy for the Parcel Mapping Project. This assessment will include a thorough review of all control-related information provided by the County, the availability and density of control throughout the County, and the types of control points provided (GPS vs. conventionally surveyed). ESRI will present the results of this assessment to the County and will identify any weaknesses in the control network that require remediation. ESRI and County staff will discuss any such control issues and if it is agreed that additional control is necessary the County will be responsible for providing it.

The spatial adjustment process will be conducted in two steps. Prior to performing the actual adjustment, a preliminary measure of the accuracy of the adjustment, the "check-in" will be performed. This is a calculation that measures the discrepancy or level of agreement between the mapping control points provided by the

County in ArcInfo format and the corresponding points in the map book data that was assembled and edgematched in the steps described above. The errors for each control point will be evaluated based on the results of the check-in.

The tolerance for check-in errors is 2 feet. Errors within this tolerance will be reduced to fit the control points exactly through a process which spreads the error over the area of the map book.

If the check-in errors are within tolerance, the adjustment will proceed and the errors will be adjusted to fit the control points through a process that distributes the error over the area of the map book. If the errors exceed the tolerance, the surveyor will first be consulted and, if necessary, the escalation process will be invoked. Escalation procedures are outlined in Section A.3.1.4 of this scope of work.

A Control Point Check-in Report will be completed for each control point used. The check-in report will include the company name, technician name, assessor book number, date of the check-in, GIMS number for each point, RMS values for both the x and y coordinates of the point, and any comments pertaining to the check-in.

A.1.3.4 Quality Control of Assembled Data

Quality control of the assembly process is largely inherent in each step of the process. For example, during assembly, discrepancies between adjacent maps will be reported and resolutions will be determined jointly between the County's Survey Division and the ESRI team.

Similarly, the spatial adjustment process is in itself a form of quality control of the assembled data and provides an aggregate measure of the positional accuracy of the assembled data comprising each Assessor map book.

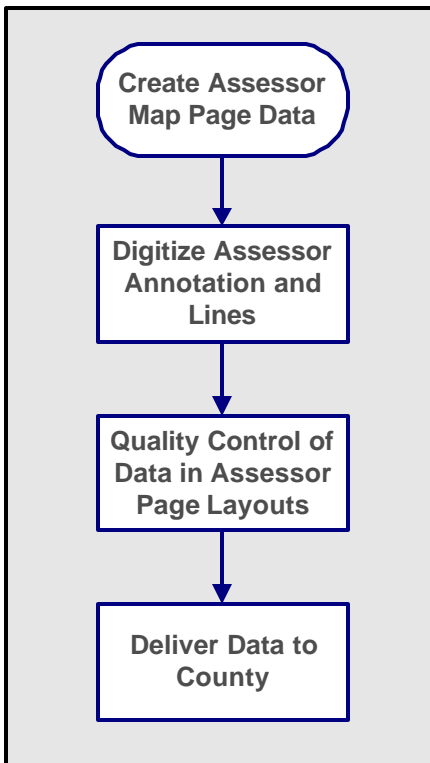
As stated earlier in this section, ESRI believes it is essential that designated County staff from the Survey Division are available on an as-needed basis to collaborate with the ESRI team on this critical phase of the project.

A.1.4 Phase 3—Add Assessor Features

Phase 3 encompasses the addition of features to the parcel database that are needed to support the production of tax map pages by the Assessor's Office. Annotation represents the bulk of the features to be added in this phase. Also included are miscellaneous lines that were not available from the tract and parcel maps (or from deeds in unplatted areas) that are needed to produce the Assessor map pages such as tax rate lines and easements.

This phase also includes creating the tax map pages including the surround information needed to produce the individual Assessor map pages. The key tasks comprising Phase 3 are illustrated in Figure A-7.

Figure A-7
Phase 3—Add Assessor Features



The addition of Assessor map features occurs as the final phase in the production process for two key reasons. The primary reason is that the correct placement and orientation of annotation requires that the data is in its correct location in the California State Plane Coordinate System. If the annotation were to be entered prior to the assembly and spatial adjustment process, it is likely that most of the annotation would have to be repositioned.

Secondly, much of the annotation to be added to the Assessor maps is not available from the tract and parcel maps, but rather must be taken from existing Assessor map pages. Therefore, it is more efficient to treat this process as a separate phase from the construction of the line work and polygons.

A.1.4.1 Create Assessor Map Page Data

The County's data model includes a series of coverages that are used for the printing of Assessor map pages. These coverages, which include the map pages boundaries as well as coverages for point, line, and polygon features in the map surround, must be created for each map page.

The primary source for this information will be the existing Assessor map pages to be provided by the County in PDF format. ESRI will automate the creation of the standard components of the page layout. The clip window will be created based on the existing extents of the map pages.

The following data will be created in this step.

- PG## coverage containing page annotation for each Assessor page
- NDX## coverages containing the page boundary for each Assessor page
- PG##.PLCMD and PG##.MAPE files containing plotting parameters for each Assessor page
- NDX#.PLCMD files containing plotting parameters for each Assessor page

A.1.4.2 Digitize Assessor Annotation and Lines

A variety of annotation and miscellaneous line features will be added to the parcel database in this step, which represents the bulk of the effort in Phase 3. The existing Assessor map pages in PDF format will be the primary source of this information.

Annotation will be placed according to the specifications for fonts, text size, and symbols provided in the County's data model. Where annotation can be derived from attributes, labeling will be used to create the annotation. Tools will be used to automate the placement of annotation where feasible, such as in areas in which lot or parcel numbers increase incrementally, and this can be accomplished programmatically. Cartographic principles and guidelines provided by the County will be applied for positioning and orienting annotation.

A.1.4.3 Quality Control of Data in Assessor Page Layouts

Quality control of the digitized Assessor annotation, lines, and page layout data will consist of both automated and on-screen visual checks.

Initially, the automated QCView checks will be run on the data to ensure its compliance with the database design. QCView's capabilities are described in detail in Section A.5 of this scope of work. All errors identified by QCView will be corrected and subsequently verified by rerunning QCView before the on-screen visual checks are performed.

As a final check of the completeness and cartographic quality of the completed Assessor data, ESRI will create a digital version of the completed map using the ArcGIS layout functionality. These maps will include all features that are supposed to be included on a finished Assessor map page. The digital maps will be verified against the original source, accounting for the possibility of some content change in areas in which maintenance has not been performed so the existing Assessor map page may not reflect recent changes.

Based on this visual check, corrections will be made to the data and the map page will be regenerated and reverified until all errors have been eliminated.

A.1.4.4 Deliver Data to County

Completed data will be delivered to the County in complete map books or groups of map books according to the production schedule to be defined during the pilot phase of the project. Data will be delivered in coverage

format according to the County's database design and in geodatabase format in the measurement database structure utilized by ArcGIS and the Survey Analyst extension.

A.1.4.4.1 Coverage Deliverables

A completed set of coverage deliverables for new parcel automation will consist of the following:

- PARC coverage for each Assessor book
- CENT coverage for each Assessor book
- ASRL coverage for each Assessor book
- SUB coverage for each Assessor book
- TRA coverage for each Assessor book
- MAPN coverage for each Assessor book
- Spatial reference file defining projection and coordinate system (.prj)
- PG## coverage for each Assessor page in a book
- NDX## coverages for each Assessor page in a book
- PG##.PLCMD and PG##.MAPE files for each Assessor page in a book
- NDX#.PLCMD files for each Assessor page in a book
- Deliverables Report for each Assessor book
- Control Point Check-In Report for each Assessor book
- Closure Report for each Assessor book
- Error Reports as required
- Metadata for all book level coverages in XML format
- Source documents provided in hard-copy form, if any

A.1.4.4.2 Geodatabase Deliverables

In addition to the coverage deliverables specified above, ESRI will deliver the completed data in ArcSDE geodatabase format. Geodatabase deliverables are described in Section A.3.6.

A.1.4.4.3 Data Transfer Method

The preferred method of transfer for the deliverables will be determined jointly by the County and ESRI. For digital deliverables, the available options include FTP file transfer, CD, and digital tape. Hard-copy deliverables, such as returned source documents, will be hand delivered.

A.2 Service Type 2 - Addition of Assessor Data

This section addresses ESRI's approach to the second service type, the addition of Assessor annotation and other features to the 170,000 parcels requiring this data. Since the requirements for the 170,000 parcels correspond to Phase 3 of the technical methodology for automating the 480,000 new parcels, there is no need to reiterate the entire technical methodology. A few differences between the two service types are outlined in this section.

All existing data for which Assessor data is to be added will be provided by the County as completed books that have been assembled, edgematched, and adjusted. The source data to be provided for the 170,000 parcels will

differ from the source data for the 480,000 parcels. Source data provided for the 170,000 parcels will include the coverage data that has already been completed by the County and the Assessor map pages in PDF format.

ESRI's Maplex extension to ArcGIS will be used by County staff to generate an initial set of annotation for each Assessor book to reduce the amount of annotation that must be manually entered. The County will provide ESRI with the annotation generated by Maplex among the other data sources for this service type. The ESRI team will modify, reposition, and verify the Maplex-generated text as necessary to meet the requirements for Assessor annotation.

The deliverables for this task will include the following:

- PARC coverage for each Assessor book
- CENT coverage for each Assessor book
- ASRL coverage for each Assessor book
- SUB coverage for each Assessor book
- TRA coverage for each Assessor book
- MAPN coverage for each Assessor book
- Spatial reference file defining projection and coordinate system (.prj)
- PG## coverage for each Assessor page in a book
- NDX## coverages for each Assessor page in a book
- PG##.PLCMD and PG##.MAPE files for each Assessor page in a book
- NDX#.PLCMD files for each Assessor page in a book
- Deliverables Report for each Assessor book
- Metadata for all book level coverages created by ESRI in XML format
- Source documents provided in hard-copy form, if any

In addition to the coverage deliverables specified above, ESRI will deliver the completed parcels for service type 2 in ArcSDE geodatabase format. The geodatabase deliverables are described in Section A.3.6.

A.3 Additional Technical Information

This section addresses a variety of general technical considerations that have not been addressed previously in Sections A.1 and A.2.

A.3.1 Parcel Basemap Accuracy Requirements

The accuracy of the parcel basemap is one of the foremost considerations of the project. The technical methodology presented earlier in this section has been designed to ensure the accuracy of the resulting data within the tolerances specified by the County. The County's goal is that the digitized dimensions stored in the database agree with the recorded dimensions within ± 2 feet. This is considered to be feasible in urban areas, but it is unlikely that it can be maintained consistently in nonurban areas.

The County recognizes that the desired degree of accuracy may not be feasible in certain areas. In these areas alternative methodologies and accuracy thresholds may be necessary. ESRI will work closely with the County to evaluate these areas and to make adjustments to the conversion methodology and accuracy requirements where necessary. The County will show flexibility with regard to the accuracy specifications for these areas.

Several factors will influence which alternative methodology will be used in areas where the standard methodology is not feasible. These factors include the distribution and quality of available control, the types of data sources available from which to derive the land fabric data (maps or deeds), and the availability of supplemental data sources such as records of survey, highway maps, etc. It may be necessary for the County to add additional control to support the use of the available documents. In any case, the decision as to how to proceed in these situations must be a joint decision between the County and ESRI.

The accuracy specifications applicable to the project are summarized in the following sections. Escalation procedures for resolving discrepancies involving accuracy requirements are also outlined in this section.

A.3.1.1 Closure of Individual Documents

Data derived from tract and parcel maps, records of survey, and right-of-way plans shall mathematically close within 1 part in 10,000 or .05 feet, whichever is larger. The closure of every tract/parcel map will be documented using the Closure Report. These tolerances will also apply to unplatted deeds which contain bearing and distance information.

If the closure is within this tolerance, a Closure Report will be completed and submitted. If the closure error exceeds this tolerance, the ESRI team will attempt to resolve the excessive closure error through consultation with its surveyor. If escalation is required, an Error Report will be prepared and submitted to the County.

A.3.1.2 Check-In to Control

Data that has been combined into Assessor books will be “checked-in” to the mapping control provided by the County. The check-in process measures the discrepancy or level of agreement between the mapping control points provided by the County in ArcInfo format and the corresponding points in the map book data that was assembled and edgematched in the steps described above. The errors for each control point will be evaluated based on the results of the check-in.

The tolerance for check-in errors is 2 feet. Errors within this tolerance will be reduced to fit the control points exactly through a process which spreads the error over the area of the map book.

A.3.1.3 Snapping and Edgematching Tolerances

Line endpoints that are within .001 feet will be snapped so that they share the exact same point. The edgematching tolerance will also be .001 feet.

A.3.1.4 Escalation Procedures

Escalation procedures may be necessary to resolve accuracy issues during the project. Where errors are within the allowable tolerances defined about they may be adjusted using standard surveying adjustment methods without notification of the County. Escalation procedures are defined for two cases in which the accuracy tolerances cannot be achieved.

A.3.1.4.1 Escalation Procedures – Case 1

For errors up to twice the allowable tolerance, the discrepancy will be resolved using established survey practices. The resolution will be documented in an entry in the PAR database as to location, magnitude, and proposed adjustment method.

A.3.1.4.2 Escalation Procedures – Case 2

Errors in excess of twice the allowable tolerance will be considered “blunders.” These are errors that fall outside normal variances of surveying measurements. Resolution of such errors will require escalation to the ESRI GIS technical contact. The GIS technical contact may direct the problem to the appropriate County department for resolution. Prior to escalating the issue to the GIS technical contact, ESRI will:

- Validate that the control points used in the analysis have been verified as being consistent with the mapping control provided by the County.
- Recheck all record calculations for input errors, compare with adjacent or ancillary records, review for proper rotation angles, and make every reasonable effort to resolve the issue using standard survey analysis techniques.
- Prepare plots or screen shots of the area of conflict in which the mapping control points are symbolized to indicate the magnitude and direction of error.
- Submit a statement specifying the documents and methods used to resolve the issue, Closure Reports if applicable, and any information that will assist the County’s GIS Project Leader in arriving at a resolution to the problem.

A.3.2 Mapping Control Points

San Bernardino County will be responsible for providing all mapping control throughout the County to support the Parcel Mapping Project. This control has been developed primarily using GPS technology and has a stated accuracy of 1 in 50,000.

The County Surveyor has evaluated the control requirements to ensure that sufficient control density is available. Specifically, the County will provide approximately four points per section in urban areas. Control density in non-urban areas will be more variable.

Early in the project, the ESRI team's surveyors will conduct a thorough assessment of the mapping control provided by the County. The goal of this assessment will be to determine its adequacy for the Parcel Mapping Project. This assessment will include a thorough review of all control-related information provided by the County, the availability and density of control throughout the County, and the types of control points provided (GPS vs. conventionally surveyed).

ESRI will present the results of this assessment to the County and will identify any weaknesses in the control network that may require remediation. If ESRI believes the control in a specific area is deficient, the perceived deficiency will be discussed with the County’s survey staff in a good faith effort to resolve it. If the County disputes the results of the assessment with regards to requiring additional control points necessary to meet the accuracy requirements, a third party licensed surveyor will perform an independent assessment of the control and related map data. ESRI and the County shall accept the findings of the third party surveyor as final. If

additional control points are recommended, the County shall provide the control points and be responsible for the cost of the third party surveyor. If additional points are not recommended, ESRI will be responsible for the cost of the third party surveyor for the work performed.

A.3.3 Metadata

Metadata, or "data about data," describes the content, quality, condition, and other characteristics of data. ESRI will ensure that accurate metadata is collected so the County's investment in geospatial data is maintained. The FGDC metadata editor in ArcInfo 8 allows users to create metadata for data sources in ArcCatalog following FGDC standards. The design of this metadata editor makes this creation a relatively simple process. When metadata is created in ArcInfo 8, the default is to create FGDC compliant metadata.

In developing the County's metadata, ESRI will provide an XML template file that will contain all XML elements such as contact information, legal constraints, and so forth, that are common to all of the County's coverages. Using the Federal Geographic Data Committee (FGDC) metadata editor, all information that is uniform for every data set will be populated initially. Information that is specific to that particular data set and information that is updated by ArcCatalog automatically, such as extents, will not be completed initially.

ESRI will work with the County during the pilot phase of this project to define the contents of the XML template. Once this is done, the XML file will be imported into all coverages with the option to automatically update metadata in ArcCatalog selected. ArcCatalog will automatically add all information that is specific to that coverage, such as the extents, the list of attributes, coordinate system, and so forth. Next, using the FGDC metadata editor, any information that is specific to the coverage, such as the title, attribute descriptions, completeness report, and logical consistency report, will be added. This process will be followed for all book level coverages.

A.3.4 Work Site Staffing

The County will establish a project office at its 670 E. Gilbert Street facility which will serve as a central location for project activities. This project office will include designated County staff representing the key departments supporting the project as well as representatives of ESRI and its team. An ESRI representative will be present at the project office for a minimum of 20 hours per week during the project. This requirement will be met by placing various members of ESRI's project management and technical management team on site as dictated by the project activities in progress at any given time.

In addition to its own staff, ESRI may place other members of its team on site as appropriate and as approved by the County's project manager.

A.3.5 Project Management Reports and Tools

One of ESRI's management objectives is to act on potential cost, schedule, or technical problems rather than react to problems after they have become a fact. The program control unit, applying proven management tools including ESRI's job cost accounting system and industry-standard microcomputer-based project control system, will assist the project team as well as project contract and technical managers in the following:

- Organize and plan the technical program utilizing current ESRI staff and management support systems.

- Develop, organize, and maintain the work breakdown structure (WBS) in conjunction with project staff.
- Provide a basis for and facilitate forecasting activities with respect to funding requirements, estimates at completion, contract changes, and so on.
- Provide pertinent cost, schedule, and financial status information to support the project review process.

In addition to the program management support that will be provided by the program control unit, the project manager will make use of a variety of reports and tools to convey progress and status information to the County, and to monitor the project internally. These include the reports identified by the County as well as two tools, PS Tracker and the Problem and Resolution database that will be used by the ESRI project team.

The following reports and tools are the subject of this section. PS Tracker and the Problem and Resolution database are ESRI tools and the remaining items are reports required by the County.

- PS Tracker
- Problem and Resolution Database
- Communication Report
- Deliverables Report
- Mapping Status Report
- Control Point Check-In Report
- Closure Report
- Error Report

Formats for the reports will be determined by mutual agreement between the County and ESRI.

A.3.5.1 PSTracker

ESRI will utilize PSTracker, its project management application that provides real-time, Web-based project status updates and interactive process collaboration, to ensure consistent communication between the project team and the County. PSTracker utilizes detailed lists of tasks and quality control steps, enabling distributed team members to standardize technical procedures. Changes to project status are instantly communicated to the entire project team. Interactive reporting tools capture and quickly communicate essential information to team leaders and managers. With the unique combination of detailed task tracking and real-time, high-level project status reporting, PSTracker is a powerful project and process management application that will be available to the ESRI team as well as to designated County project staff.

The effective use of PSTracker is based on the development of production units that can be tracked through the production work flow. These production units will be the basis for all tracking and reporting in PSTracker. The delivery units need not be uniform in size or shape.

The County has established priorities for the production process that will be used to create production units. During the pilot phase of the project, the County and ESRI will jointly develop a scheme for aggregating the County's priority Assessor books into production units. ESRI suggests that approximately 16 production units consisting of roughly 30,000 parcels each be established for parcels to be newly automated. These production units will consist of multiple Assessor books. Additional production units will be specified for partially completed parcels requiring the addition of annotation.

A.3.5.2 Problem and Resolution Database

The PAR process serves as the primary mechanism for resolving technical issues between ESRI and the client, with ESRI management and quality assurance acting as the intermediary. The PAR database will be used to provide real-time communication among those project members most essential to the resolution of data development issues (e.g., data entry/conversion personnel and San Bernardino County staff), and to enable managers to track trends in the nature and frequency of data conversion issues and respond programmatically to the data conversion effort.

Digital PAR forms will be used to report technical issues identified during production and to document the issue and the jointly agreed resolution. As PARs are entered, appropriate staff will be automatically notified of the new PAR via e-mail. Initially, the functional manager may be able to answer the question, but in many cases, it will need to be forwarded through ESRI to the County's management team for resolution.

The Web form content will be customized to meet the specific requirements of the San Bernardino Parcel Mapping Project. The PAR database also has search capabilities that allow the project team (ESRI and County) to look for similar issues that have already been resolved, eliminating the need to contact the County again for resolution. The database also provides e-mail notification to alert project team members when PAR forms have been submitted, updated, and resolved.

A.3.5.3 Standard Communication Report

A Standard Communication Report will be the general mechanism for reporting technical, scheduling, or contract issues. This report will be delivered to the County's project manager as needed but no less frequently than once per month. The format for the Standard Communication Report will be developed jointly by the County and ESRI prior to the start of County-wide production.

A.3.5.4 Deliverables Report

The Deliverables Report will accompany each delivery of data to the County. It identifies the book, delivery date, coverages delivered, and sources used and includes other reports, such as Closure Reports, Error Reports, and Control Check-In Reports, as attachments.

A.3.5.5 Mapping Status Report

The Mapping Status Report will communicate the status of conversion packages that are in progress. This report will be submitted weekly on Mondays and will reflect the mapping status at the close of the previous week. The Mapping Status report will be supplemented by the real-time status reporting available through PS Tracker.

A.3.5.6 Control Point Check-In Report

The purpose of the Control Point Check-In Report will be to document the alignment of map data points with control points supplied by the County. Each control in the project will be documented using this form. The report will identify the check-in values for each control point prior to any adjustment being performed.

A.3.5.7 Closure Report

A Closure Report must be submitted for each subdivision or tract map digitized using coordinate geometry to document closure for the map. The Closure Report will identify the closure for each document prior to any adjustment being performed.

A.3.5.8 Error Report

The Error Report will serve as a mechanism for reporting situations in which error tolerances are exceeded. ESRI will configure the PAR database so that the Error Report will be superseded by the PAR database since this type of reporting is what it is designed to do. ESRI will work with the County to configure the PAR database so it can replace the Error Report.

A.3.6 Project Contacts

ESRI's overall project manager for the Parcel Mapping Project will be Charlie Wells, Senior Project Manager in the Database Services Department. Mr. Wells will be available as a point of contact for the County GIS Project Leader for any issues pertaining to the project.

To ensure that project communications occur in a consistent and reliable manner, ESRI will designate contacts who will be responsible for the four classes of issues identified by the County. These contacts will remain in effect throughout the project unless modified by mutual agreement between the County and ESRI.

- Mapping issues include issues regarding source documents, adjustment to control, and conversion methodology. The mapping contact will be Craig MacLachlan.
- Technical issues all questions regarding the ArcInfo software, table structures, symbol tables, County-supplied macros, file formats, or other issues regarding the physical nature of the digital data. The technical contact will be Rama Atluri.
- Schedule issues include issues regarding the project schedule, delivery schedule for parcel data, notification of early or late deliverables, renegotiation of schedule, or other issues regarding the dates of project transactions. The schedule contact will be Craig MacLachlan.
- Contract issues include any questions regarding requirements or stipulations in the contract. This may include price of services, payment for services rendered, insurance, and general adherence to contractual obligations. The contract contact will be Charlie Wells.

A.3.7 Geodatabase Deliverables

To facilitate the County's transition to ArcGIS and the geodatabase, and to improve the ability of County staff to maintain the data, ESRI will convert the completed coverage data into an ArcSDE geodatabase. This conversion will include the 480,000 newly automated parcels as well as completed Assessor books for the 170,000 parcels completed by ESRI and any Assessor books previously completed by the County with the qualification that the completed books must be fully compliant with the library coverage model.

The structure of the geodatabase will be consistent with the model used in the Survey Analyst extension to ArcGIS and will maintain the existing COGO attributes while supporting future links between survey data and the cadastral feature classes.

ESRI will design a geodatabase that supports the County's existing coverage data model and which takes advantage of the enhancements provided by ArcGIS and Survey Analyst. After data has been accepted by the County in the coverage data model, it will be loaded into a seamless countywide ArcSDE geodatabase at a point in the project that is deemed to be most appropriate for this migration effort.

A.3.8 Data Transfer Approach

The primary mechanism for the transfer of the source data from the County to ESRI will be FTP transfer. ESRI maintains an FTP site that supports the secure transfer of data between ESRI and its customers. A secure, password-protected FTP location will be established for the San Bernardino County Parcel Mapping Project. Access to this location will be strictly limited to project personnel who require access to the site. The password will be supplied to the County's project manager who will control access to the site for County personnel.

A.4 Project Work Plan

The project work plan describes the tasks to be performed to complete the project, the ESRI deliverables for each task, and the County's responsibilities in support of each task. The tasks described below correspond to the tasks illustrated in the MS Project plan provided in Section A.7 of this scope of work.

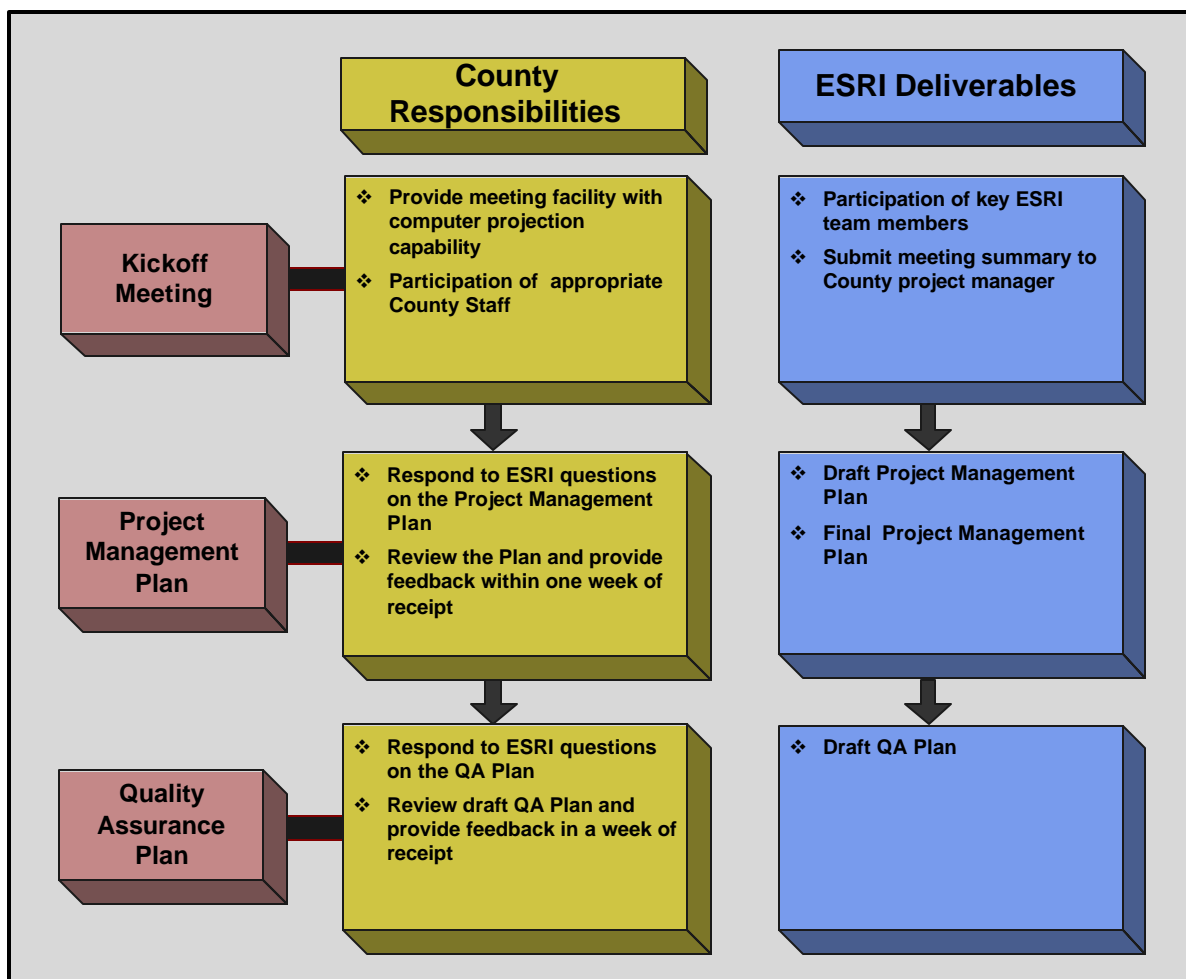
The work plan is organized into three phases.

- Project Initiation—Section A.4.1
- Parcel Database Pilot Project—Section A.4.2
- County-Wide Parcel Database Development—Section A.4.3

A.4.1 Project Initiation

The project initiation phase will begin with the project Kickoff Meeting. This phase also encompasses the development of several important planning documents that will establish the management framework for the project. The primary tasks in the project initiation phase are summarized in Figure A-8.

Figure A-8
Project Initiation Phase



A.4.1.1 Kickoff Meeting

A project Kickoff Meeting will be held to initiate the project soon after the contract has been finalized. The Kickoff Meeting will be held at a County facility and will involve key ESRI project staff, key staff representing the principal members of ESRI's team, and members of the County's management and technical team. The meeting will be one day in duration.

Topics to be covered at the meeting will include introductions of ESRI team members and County management and support staff, points of contact for management and technical issues, communication protocols, discussion of the project work plan, review of the project schedule, identification of the pilot project area, and planning for initial project activities.

San Bernardino County Responsibilities

- Provide a meeting facility at the County with computer projection capability.
- Arrange for the participation of appropriate County staff at the Kickoff Meeting.

ESRI Deliverables

- Arrange for the participation of key ESRI team members at the Kickoff Meeting.
- Submit a meeting summary to the County project manager within one week following the meeting.

A.4.1.2 Prepare Project Management Plan

In keeping with ESRI's standard procedure for large implementation projects, ESRI will prepare a Project Management Plan that will provide the management framework for the project. The Project Management Plan will address a range of topics that are critical to the success of the project including project organization, monitoring and cost control mechanisms and tools, assumptions, external and internal dependencies, subcontractor management, staffing, risks and risk mitigation, and change control.

The Project Management Plan is intended to be of value to the County's management team by providing assurances that the ESRI team is addressing the key management issues associated with the project. It will also demonstrate to the County how ESRI proposes to manage its subcontractors.

ESRI will provide a draft of the Project Management Plan within 10 working days following the Kickoff Meeting. The County will have one week to review the plan and provide consolidated feedback to ESRI. A final version of the Project Management Plan will be prepared, incorporating the County's feedback as appropriate.

San Bernardino County Responsibilities

- Respond to ESRI questions during preparation of the Project Management Plan.
- Review the draft Project Management Plan and provide consolidated feedback within one week of receipt from ESRI.

ESRI Deliverables

- Draft Project Management Plan
- Final Project Management Plan

A.4.1.3 Prepare Draft Quality Assurance Plan

ESRI's typical approach to developing Quality Assurance Plans consists of two stages. Initially, a draft version of the plan is developed prior to the pilot project. Following the pilot project, the draft Quality Assurance Plan will be modified to reflect the results of the pilot project and provide the definitive quality assurance framework for the production effort.

Early in the project, ESRI will prepare the draft Quality Assurance Plan that will define all aspects of the quality assurance program to be implemented for the project. The Quality Assurance Plan will be developed by ESRI's quality assurance manager and will be based on ESRI's experience with past projects that are similar to the County's Parcel Mapping Project. Topics to be addressed in the Quality Assurance Plan will include reference

documents, acceptance criteria as defined in Section A.5.3 of this statement of work, audit points, process review, problem and resolution management, sampling strategy and statistics generation, subcontractor QC management, and risk management. The plan will define QC roles and responsibilities for the ESRI team and for the County.

In developing the Quality Assurance Plan, ESRI will take into account the quality control tools and procedures already in use by County staff. In conjunction with the County, ESRI will identify how best to integrate the County's tools with QC tools developed and used by ESRI.

The draft version of the Quality Assurance Plan will be prepared within three weeks following the Kickoff Meeting. This draft version will be submitted to the County and the County will provide consolidated feedback within one week of receipt of the plan. ESRI will incorporate feedback from the County as appropriate and redeliver the draft Quality Assurance Plan. The Draft Quality Assurance Plan will be updated following the pilot project.

San Bernardino County Responsibilities

- Respond to ESRI questions during preparation of the Quality Assurance Plan.
- Review the draft Quality Assurance Plan and provide consolidated feedback within one week of its receipt from ESRI.

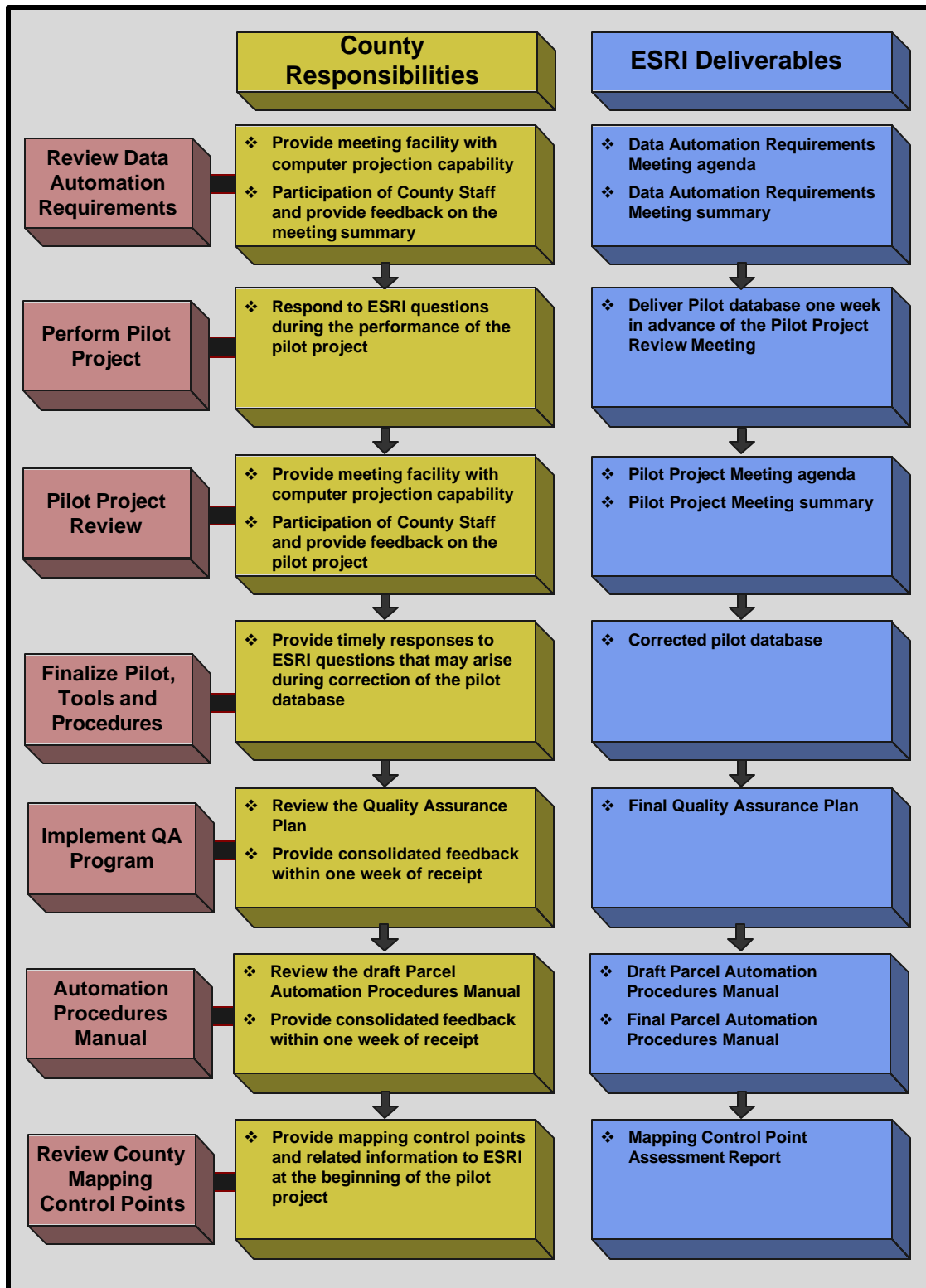
ESRI Deliverable

- Draft Quality Assurance Plan

A.4.2 Parcel Database Pilot Project

The project initiation phase of the project will lead quickly into the parcel database pilot project phase. During this phase (Figure A-9), the data conversion requirements will be reviewed and documented; pilot tools and procedures will be developed; the pilot project will be completed; and any necessary adjustments to the tools, procedures, or Quality Assurance Plan will be made in preparation for County-wide production.

Figure A-9
Parcel Database Pilot Project Phase



A.4.2.1 Review Data Automation Requirements

The fact that the County has in place a mature, well-defined data model will expedite completion of the pilot. Prior to beginning the pilot project, however, it will be necessary to conduct a meeting to review the database automation requirements so these requirements are clear to the key members of the ESRI database development team.

The Data Automation Requirements Review Meeting will be a two-day meeting to be held at a County facility. The focus of the meeting will be to review the County's parcel database requirements to ensure development of appropriate automation tools and procedures by the ESRI team. A key aspect of the meeting will be to review a sample of source maps and documents and to discuss with the County how the various situations on the maps should be handled. Input from the County Surveyor, the Assessor, and the Geographic Information Management System (GIMS) will be essential to this meeting. A review of the pilot project area will also take place as part of this meeting.

ESRI will provide a meeting agenda one week in advance of the meeting. Within a week following the meeting, ESRI will submit a summary of the meeting. This summary will serve as the basis for a Parcel Automation Procedures Manual to be prepared in conjunction with the pilot project.

San Bernardino County Responsibilities

- Provide a meeting facility at the County with computer projection capability.
- Arrange for the participation of appropriate County staff at the Data Automation Requirements Review Meeting. The participation of representatives of the Survey Division, the Assessor, and GIMS in the meeting is considered essential.
- Review the Data Automation Requirements Meeting summary and provide consolidated feedback.

ESRI Deliverables

- Data Automation Requirements Meeting agenda
- Data Automation Requirements Meeting summary

A.4.2.2 Perform Pilot Project

Immediately following the Data Automation Requirements Meeting, the ESRI team will begin work on the pilot project. Performance of a pilot project is considered essential to any large-scale database development effort and has many benefits. These include testing and refining the methodology for automating the data, demonstrating that the ESRI project team understands the County's requirements, exercising the data automation tools and procedures to ensure that they are sound and efficient, identifying and resolving any data automation issues that were not anticipated prior to the pilot, and implementing the quality control tools in a preproduction environment.

Based on the information gathered at the Data Automation Requirements Meeting, the ESRI team will develop tools and procedures to perform the pilot project. This will include configuration of existing ESRI quality control tools as well as implementation of any new QC tools that may be required.

The ESRI team proposes to complete the pilot project over a period of approximately eight weeks (see project schedule in Section A-7). During this time, ESRI will contact the designated point(s) of contact for technical questions as they arise. Timely responses to questions by the County point of contact will be important in order to maintain the schedule. ESRI will deliver the pilot database and a brief technical memorandum documenting the pilot to the County one week prior to the Pilot Project Review Meeting (see Section A.4.2.3).

The pilot project will address the automation of new parcels. The second service type, the addition of Assessor annotation and line work to the partially completed parcels, represents a subset of the conversion methodology for full automation of new parcels. In order to expedite the production phase for addition of annotation, ESRI will conduct a small pilot project for this service type concurrent with the new parcel automation pilot.

San Bernardino County Responsibility

- Provide timely responses to questions submitted by ESRI during performance of the pilot project.

ESRI Deliverables

- Pilot database delivered one week in advance of the Pilot Project Review Meeting.
- Pilot Project Technical Memorandum.

A.4.2.3 Pilot Project Review

One week following the delivery of the pilot database to the County, a Pilot Project Review Meeting will be held at the County or at ESRI, depending upon the need to demonstrate production issues and procedures. It is proposed that two days be allowed for the Pilot Project Review Meeting to ensure that all relevant topics and issues are covered.

During the meeting, ESRI will first present the results of the pilot project. This will include an overview and demonstration of the technical methodology followed by discussion of any source data or technical issues encountered during the pilot or anticipated for County-wide production.

ESRI will provide an agenda for the Pilot Project Review Meeting prior to the meeting. Following the meeting, ESRI will prepare a meeting summary to be delivered to the County within one week of the meeting. The County will have one week to review the summary and provide feedback. County feedback will be incorporated into the summary as appropriate.

San Bernardino County Responsibilities

- If the consensus is to hold the meeting at the County, provide a meeting facility at the County with computer projection capability.
- Arrange for the participation of appropriate County staff at the Pilot Project Review Meeting. The participation of representatives of the Survey Division, the Assessor, and GIMS in the meeting is considered essential.
- Review the pilot project meeting summary and provide consolidated feedback.

ESRI Deliverables

- Pilot Project Review Meeting agenda and participation
- Pilot Project Review Meeting summary

A.4.2.4 Finalize Pilot, Tools, and Procedures

County feedback on the pilot database, as well as information resulting from the Pilot Project Review Meeting, will be used to refine and finalize the pilot project database and the production tools and procedures in preparation for full production. ESRI will work closely with its local team members to ensure that all required changes have been made to the technical methodology.

Once any required changes have been made to the pilot database, it will be redelivered to the County as an actual deliverable. ESRI intends for the pilot to meet all requirements of the project and that the pilot database represent the first data delivery.

San Bernardino County Responsibilities

- Provide timely responses to ESRI questions that may arise during correction of the pilot database.
- Provide written acceptance of the pilot database and authorization to proceed with full production.

ESRI Deliverable

- Corrected pilot database

A.4.2.5 Implement Quality Assurance Program

ESRI's quality assurance philosophy and QC implementation program for the Parcel Mapping Project are described in detail in Section A-5 of the scope of work. Prior to full production, ESRI will fully implement the QC program at each ESRI team member location. Our approach will be to implement the same tools and procedures for each team member to ensure consistency among the entire team. This approach has been highly successful on previous projects where the project team was distributed.

The Quality Assurance Plan, delivered early in the project as a draft, will now be finalized. Any modifications resulting from the pilot project and/or the Pilot Project Review Meeting will be incorporated into the QA Plan. The document will be submitted to the County for review and feedback. Consolidated feedback provided by the County will be incorporated into the final QA Plan as appropriate.

San Bernardino County Responsibility

- Review the Quality Assurance Plan and provide consolidated feedback.

ESRI Deliverable

- Final Quality Assurance Plan

A.4.2.6 Prepare Parcel Automation Procedures Manual

The ESRI project team will prepare a Parcel Automation Procedures Manual describing the technical methodology for the parcel database development effort. The Parcel Automation Procedures Manual will include detailed specifications for data capture and representation. It will also serve as the repository for data automation guidelines that have been defined to date and will be reissued later in the project if warranted by the volume of changes that occur following its initial preparation.

The Parcel Automation Procedures Manual will include an overview of the ESRI team members and their interactions, guidelines for interpreting source data, detailed data automation procedures, quality control procedures, and data delivery procedures.

A draft of the Parcel Automation Procedures Manual will be delivered to the County for review following the pilot project. The County will review the document and provide consolidated feedback within one week. County feedback will be incorporated into the document as appropriate.

San Bernardino County Responsibilities

- Review the draft Parcel Automation Procedures Manual and provide consolidated feedback within one week of receipt.

ESRI Deliverables

- Draft Parcel Automation Procedures Manual
- Final Parcel Automation Procedures Manual

A.4.2.7 Review and Assess County Mapping Control Points

In conjunction with the pilot project, the ESRI team will conduct an assessment of the mapping control provided by the County to determine its adequacy for the parcel mapping project. This assessment will include a thorough review of all control-related information provided by the County, the availability and density of control throughout the County, and the types of control points (global positioning system [GPS] vs. conventionally surveyed) provided. ESRI will present the results of this assessment to the County and will identify any weaknesses in the control network that require remediation. The mechanism for resolving control issues is outlined in section A.3.2 above.

San Bernardino County Responsibilities

- Provide mapping control points and related information to ESRI at the beginning of the pilot project. Information to be provided includes
 3. Control points
 4. Index map showing streets, assessor book boundaries, and control point locations for all areas to be mapped
 5. County surveyor field book pages for every control point

6. Mapping control databases in ArcInfo coverage format

ESRI Deliverable

- Mapping Control Point Assessment Report.

A.4.2.8 Configure Production Management Tools

Production tracking and status reporting will be crucial to the successful completion of the San Bernardino County Parcel Mapping Project. The County has identified a number of reports that it requires. In addition to these reports, ESRI's Professional Services Division has established several project management mechanisms for the reporting and tracking of project status, change, and management. These systems are utilized by ESRI's project managers and the program control unit of the Professional Services Division to help project managers effectively manage projects with an open channel of communication established between our clients and all project team members. See Section A.3 for a detailed discussion of the program management approach and the tools to be configured for the project.

ESRI will work with the County's project manager to design the Standard Communication Report and to refine the design of the other County-defined reports. ESRI will configure the PS Tracker software to conform with the production tasks defined in Section A.1 and A.2 of the scope of work and the incremental delivery units agreed to prior to the pilot project. ESRI will also configure the PAR database for its team members and for the County's project team.

San Bernardino County Responsibilities

- Work with ESRI to define the Standard Communication Report, and refine the other County-specified reports.
- Provide the names of County staff who will need Web access to PSTracker and the PAR database.

ESRI Deliverables

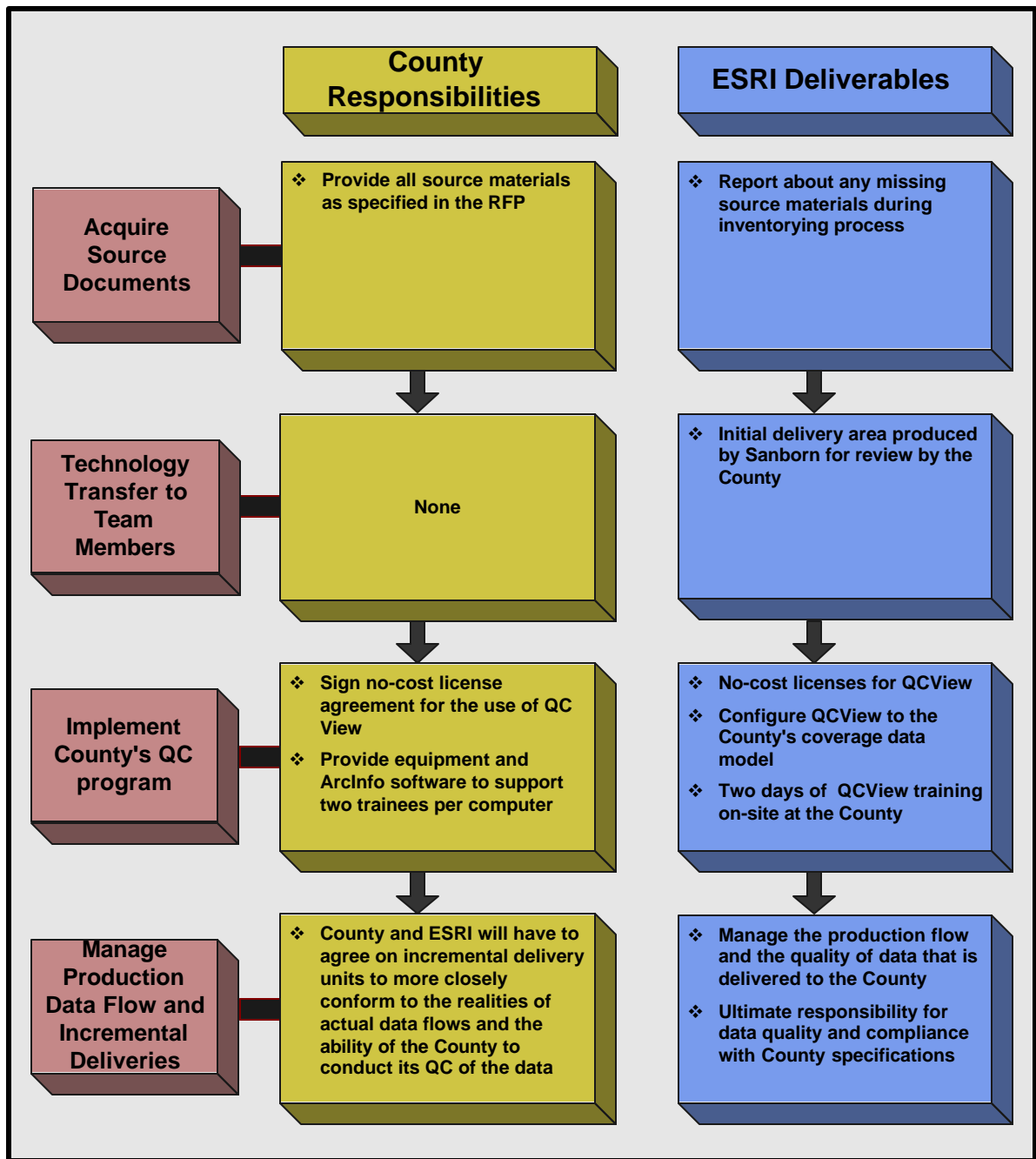
- County-specified reports provided at intervals agreed to by the County and ESRI.
- Real-time access to PSTracker and the PAR database throughout the project.

A.4.3 County-Wide Parcel Database Development

Development of the County-wide parcel database will commence following completion of the pilot project and the associated adjustments to the tools, procedures, and implementation of the production management tools and reports. Upon acceptance of the pilot project database, the County will provide written authorization to proceed with County-wide database development.

The major activities comprising the production effort are shown in Figure A-10 below.

Figure A-10
County-Wide Parcel Database Development Phase



A.4.3.1 Acquire Source Data

The production effort will begin with the acquisition and inventorying of source materials. The following source materials will be provided by the County for use on the project:

- GPS control point database.

- County surveyor's field book for each control point.
- Completed line work for the approximately 170,000 parcels requiring additional annotation with associated page plot files, organized by Assessor book.
- Maps, documents, and tabular data.
- Land records assessment for each assessor book providing information about known problem areas.

These items represent thousands of files that must be acquired, inventoried, and organized. To manage these files, ESRI will establish a protected access area on one of the Database Services Department servers that is designated for the Parcel Mapping Project. Within this protected directory, ESRI will organize and inventory all digital sources provided by the County. As the data is inventoried, missing items will be brought to the County's attention in writing. ESRI's inventory control process is described in Section A.1.2.1.

San Bernardino County Responsibility

- Provide all source materials as specified in Section A.1 of the scope of work.

ESRI Deliverable

- Report to the County any source materials that are found to be missing during the inventory process.

A.4.3.2 Technology Transfer to Team Members

ESRI will divide the parcel automation work between two conversion contractors as a risk mitigation measure and to shorten the overall duration of the project if necessary. The conversion contractor with the majority share of work, Nobel Systems, will participate in the pilot phase of the project, while the minority-share contractor, Sanborn, will begin work after the pilot project.

Shortly following completion and acceptance of the parcel database pilot project, ESRI will mobilize Sanborn for full production through a technology transfer program.

The first deliverable provided by Sanborn will be treated internally to the ESRI team as an internal pilot, but will not be subject to a specific pilot review by the County. Sanborn's initial delivery will be scrutinized using the quality control tools implemented for County-wide production and, if necessary, will be returned to Sanborn until it meets specifications. Only after this deliverable has been accepted by ESRI and the County will Sanborn be authorized to proceed with production.

San Bernardino County Responsibility

- Review initial Sanborn delivery and provide written acceptance to ESRI.

ESRI Deliverable

- Initial delivery area produced by Sanborn for review by the County

A.4.3.3 Support Implementation of County Quality Control Program

Establishment of a rigorous and consistent quality control program for all members of the project team will be an important element of the production effort. ESRI believes strongly that its customers should be equipped with effective quality control capabilities that are the same or very similar to those the ESRI project team uses to conduct its own quality control. On the other hand, ESRI acknowledges that the County uses well-established QC tools for its internal QC.

ESRI proposes to work with the County to develop and implement a quality control program that encompasses the checks performed by the County using its tools and any additional or alternate checks being used by the ESRI team.

The keystone of ESRI's QC tools for workstation ArcInfo is QCView. QCView is described at length in Section A-5 of this scope of work. ESRI will provide copies of its QCView software at no charge for use by the County at the County's discretion. In this task ESRI will configure QCView to the County's coverage data model and provide training to County staff in the use of QCView and GIS Data ReViewer. It is expected that this configuration and training will take three days in total.

San Bernardino County Responsibilities

- Sign no-cost license agreement for the use of QCView and GIS Data ReViewer.
- Provide a training environment with adequate equipment and ArcInfo software to support two trainees per computer.

ESRI Deliverables

- No-cost licenses for QCView and GIS Data ReViewer.
- Configure QCView to the County's coverage data model.
- One day of QCView and GIS Data ReViewer installation and configuration on-site at the County.
- Two days of QCView and GIS Data ReViewer training on-site at the County.

A.4.3.4 Manage Production Data Flow and Incremental Deliveries

County-wide parcel database development will continue for approximately 18 months (see project schedule in Section A-7). Once all of the ESRI team members have been mobilized, ESRI's primary role will be to manage the production flow and the quality of data that is delivered to the County. Each team member will perform internal quality control of its work prior to delivering it to ESRI for final review. Standardized quality control tools and procedures will be in place at each subcontractor site. ESRI will have ultimate responsibility for data quality and compliance with County specifications.

ESRI's proposed technical methodology has been described in detail in Sections A.1 and A.2 of this scope of work. In addition, Section A.3 addressed a range of technical considerations and specifications. The

production phase of the project will be carried out in accordance with the methodologies and tools described in those sections.

As part of the pilot project, the County and ESRI will agree upon incremental delivery units based on map books. It is expected that delivery units will consist of more than one book in most cases. Once production is underway, the County and ESRI may agree to modify the original delivery units to more closely conform to the realities of actual data flows and the ability of the County to conduct its QC of the data.

San Bernardino County Responsibilities

- Timely review of incremental deliveries throughout the production phase in accordance with the review cycle outlined in Section A-5.
- Timely response to technical issues submitted through the PAR database (within 2 working days if possible).

ESRI Deliverables

- Incremental deliveries of coverage and geodatabase data according to the project schedule to be defined during the project initiation phase of the project.
- Status reporting using the reports defined in Section A.3.5 of the scope of work.
- Maintenance of the PSTracker system and the PAR database to supplement normal status reporting with real-time reporting.

A.5 Quality Assurance Philosophy and Data Validation Approach

A.5.1 Quality Assurance Philosophy

The Database Services Department within ESRI's Professional Services Division has developed and maintains a rigorous and well-established quality assurance (QA) program that is applied to all projects performed by the department. The QA program has evolved into a sophisticated, multifaceted system for ensuring the quality of digital data and its associated applications and products.

ESRI recognizes that the County also has a well-established QC program for validating its coverage data. ESRI will work with the County during the pilot phase of the project to determine how the County might take advantage of tools that can be provided by ESRI and how these tools might complement the County's existing QC procedures and tools. The following sections address ESRI's QA program and tools.

A.5.2 Parcel Mapping Project Quality Assurance Program

ESRI will implement a comprehensive QA program for the San Bernardino County Parcel Mapping Project, which includes rigorous QC measures at critical points throughout the life cycle of the project. The conversion and QC processes will be developed prior to the pilot phase and evaluated and refined during the pilot phase.

The automated and visual data validation checks will ensure the County's acceptance criteria requirements are met. For automated checks, QCView will be the primary tool used to validate coverage integrity and attribution specifications. For visual checks, the GIS Data ReViewer and checkplots will be used to validate completeness, attribute assignment, line work, annotation placement and spelling, and edgematching. Additional visual checks will include finished map layouts of Assessor map pages.

The QA program for the Parcel Mapping Project is outlined below.

A.5.2.1 Quality Assurance Plan

During the project initiation phase of the project, a Quality Assurance Plan will be developed to document the QA/QC methodology for the project database. The purpose of the QA Plan is to establish a core set of standard quality control steps that ensure acceptable deliverables. This plan will also provide a framework to ensure that all team members follow the identical set of guidelines.

The scope of quality control and the quality assurance objectives required for the data automation effort will be incorporated into the QA Plan. The QA Plan will identify areas of specific QA needs and outline the steps and processes that will be performed to meet those needs. The QA Plan provides uniform requirements and procedures that will govern every feature, table, layer, and attribute checked and how this should be done. The QA Plan provides a comprehensive outline of the QA procedures to ensure the GIS database meets the established quality criteria and end user needs.

The QC requirements of the project will be discussed initially at the Data Automation Requirements meeting to be held early in the project. Information gathered from this meeting will be incorporated into the QA Plan.

The QA Plan will address the following topics:

- Purpose
- Reference Documents
- Project Schedule
- Acceptance Criteria
- Audit Points
- Source Tracking
- Process Reviews
- Problem and Resolution (PAR) Reporting Process
- Tools, Techniques, and Methodologies
- Statistical Generation
- Sampling Strategy
- Environment Control
- Subcontractor Control
- Risk Management

A draft QA Plan will be created prior to the pilot data delivery. The methodology outlined in the draft QA Plan will be tested during the pilot project phase of the project. Any changes resulting from the pilot project or as a result of the County's review of the draft QA Plan will be incorporated into the final QA Plan as appropriate.

A.5.2.2 Quality Control Tools

ESRI will employ three primary tools for quality control of the parcel database. QCView, a comprehensive suite of QC tools, will be used for automated checking of coverage integrity and attribution. The GIS Data ReViewer will be used for the visual on-screen checking. Also, the ESRI team will use checkplots at certain points in the QC process. These tools are described in the following sections.

A.5.2.2.1 QCView

QCView is a database quality control application developed by ESRI's Professional Services Quality Assurance team that provides users with a wide array of tests to apply on new or existing ArcInfo databases. QCView incorporates both ArcInfo and ArcView functionalities to take full advantage of the strengths of each. ArcView provides the user interface, the main test drivers, and coverage integrity checking, while ArcInfo provides the INFO attribute table, RDBMS table integrity checks, and more robust topological tests. QCView is a useful tool for testing and determining the acceptability of new data as well as ensuring that updates to existing data meet established data specifications.

There are 18 standard QCView tests including the following:

- Coverage Existence Check—Verifies that the specified data set (coverage) exists under the data path.
- Coverage File Existence Check—Checks and verifies that all required arc data files under both the data tile and coverage directories exist and that no extraneous files are present.
- Data Within Map Extent Check—Checks that all coverages and feature classes fall within the extent of the data tile boundary.
- INFO File Test—Checks specified coverage for required feature attribute tables and other INFO files.
- Coverage Precision Check—Checks specified data set for coordinate precision (single or double).
- No Records Check—Identifies zero record counts in feature attribute tables for the specified data set.
- Oracle Table Format Check—Checks for required items of all Oracle tables as defined in the Database Design.
- Topology Check—Checks for topological errors of a specified data set.
- Annotation Standards Check—Checks that all annotation text strings adhere to annotation parameters for level, symbol, size, offset, and justification as specified in the Database Design.
- Edit Standards Check—Checks for proper coverage "fuzzy" processing tolerances, valid arc dangle lengths and correct projection.
- ArcInfo Check—Performs standard ArcInfo topological checks (node errors, label errors).
- Table Format Check—Checks the specified data set for the existence and format of all INFO tables.

- Valid Code Frequency Check—Checks for valid item code occurrences (RDBMS item values or INFO feature attributes) using predefined lookup tables.
- Unique Value Check—Checks for uniqueness among values within a table item (INFO or RDBMS).
- Value Range Check—Checks that numeric item values are within a specified range or collection of valid numeric values.
- Populated Item Check—Checks for unpopulated items in a table (INFO or RDBMS).
- Relate Check—Checks for valid relates between items in database tables (INFO and/or RDBMS).
- Consistency Check—Verifies logical consistency relationships between item attributes within a single data table.

QCView can easily accommodate the inclusion of additional customized project-specific quality control checks.

QCView is configured through ASCII control files, which contain database specification information. The ASCII control files store database specification information for annotation, table formats, table relates, editing tolerances, and the list of tests to be applied to the data.

A.5.2.2.2 GIS Data ReViewer

The GIS Data ReViewer is a custom ArcMap application developed by ESRI's Production Line Tool Set (PLTS) Group to support visual data review. The ArcGIS Data ReViewer is composed of a series of buttons, tools, and context menus and used to identify where corrections, additions, and deletions must be made to the spatial data and to attributes of the spatial data.

Errors identified by the user are stored in an error table that stores the *x,y* location of the error, the coverage or feature class name, a description of the error, the date the error was identified, and the technician who recorded the error. From the error table, an error point coverage or feature class can be generated.

To allow for systematic review of the data, the GIS Data ReViewer supports creation of a QC grid over the extent of the data. Each grid cell can be updated with a status flag indicating that the cell has been reviewed. An overview window is available to use as a frame of reference.

For visual review purposes, the GIS Data ReViewer requires no project-specific configuration. However, the option to customize the menu list of error descriptions is available for logging errors to the error table.

A.5.2.2.3 Checkplots

Checkplots will be used to ensure the cartographic integrity and attribute accuracy of the coverage data being reviewed. The main purpose of these checks will be to determine completeness of cartographic features as compared to source documents. Manual visual review of checkplots is most effective with a clear, legible, and complete checkplot marking methodology. All checkplots will have the same marking schema to ensure consistency throughout the entire project and to lessen confusion.

Symbology will be used to differentiate map elements by code value. Multiple data themes and types can be plotted together to check alignment and placement of all features.

A.5.2.3 Quality Control Checks

This section summarizes the quality control checks that will be performed on the data. These include checks using QCView, GIS Data ReViewer, and checkplots.

The following table summarizes the QC checks that will be performed and the tool(s) that will be used for each.

**Table A-1
Quality Control Checks**

Quality Control Check	Tool(s)
Positional accuracy check – verify selected coverage features for positional accuracy within defined tolerances or as otherwise specified in the error reports	GIS Data ReViewer Checkplots
Projection check – verify projection is California State Plane Coordinate System (CCS83), Zone 5, EPOCH date 1992.88	QCView
Survey control check – verify that data coincide with survey control provided by the County	GIS Data ReViewer Checkplots
Check-in to control, closure, and error reports check – review reports for accuracy and for incorporation into QC processing so that conformance can be calculated accurately	In process
Metadata format and completeness - verify proper format and completeness	GIS Data ReViewer
Assessor page and page index plotting check – verify ability of the delivered data to be inserted into the Assessor page and page index map plotting system. All Assessor pages and index pages contained within the Assessor book must plot without program failure	Manual
Book directory existence check - check for the existence of the data directory (data path) as an Assessor book directory	QCView
Coverage existence check –verify that all specified Assessor book datasets (coverages) exist under the data path	QCView
Coverage file existence check – verify that all required data files and metadata for the Assessor book directory exist and that no extraneous files are present	QCView
INFO file test – verify that the INFO tables for the required Assessor book directory coverages exist	QCView
Other INFO files test – checks that the required feature attribute tables and field definitions for the required Assessor book directory exist and are correctly defined	QCView

Coverage double-precision check – verifies that the coordinate precision for the Assessor book coverages is double precision	QCView
No records check - identifies zero record counts in feature attribute tables for a specified dataset. Feature attribute tables with zero record counts should be reviewed for validity.	QCView
Topology checks	QCView
Label errors – identifies polygons with missing labels	
Dangling arcs – identifies dangling arcs (unsnapped lines)	
Extra vertices – identifies extraneous vertices on straight lines	
Line snapping – verifies that endpoints are snapped within the ‘fuzzy’ tolerance	
Undershoots and overshoots – identifies undershoots and overshoots that should be snapped	
Curve vertex density – verifies proper point density on curves	
Ability to build topology – verifies that there are no intersections that would prevent proper building of topology	
APN attribute accuracy - checks the accuracy of the attributes in the PARC.PAT table to ensure that all attributes fall within valid ranges	QCView
Annotation standards check - checks that annotation adheres to annotation parameters for level, symbol, size, offset, and justification as specified in the database design	QCView
Valid code frequency check - checks for valid item codes in INFO feature attribute tables using pre-defined lookup tables	QCView
Value range check - checks that numeric item values are within a specified range or collection of valid numeric values	QCView
Populated item check - checks for unpopulated items in INFO tables	QCView
Consistency check – verifies logical consistency relationships between item attributes within a single data table.	QCView

If the data meets the acceptance criteria, ESRI will submit the data to the County for review. If the data does not meet the acceptance criteria, the QC report will be provided to the County for review. The pilot database will be corrected, reviewed, and submitted again to the County.

ESRI will conduct a 100 percent review between the source materials and the pilot delivery data to ensure the data conforms to the requirements defined in the QA Plan. Any errors identified in the pilot review process will be logged in an error table using the GIS Data ReViewer. The results of the pilot QC will be summarized in a QC report.

Automated QCView checks will run on 100 percent of each data deliverable. Any errors identified by QCView will be logged in a report generated by QCView. The results of the QCView checks will be summarized in the QC report.

Errors identified in the visual review process using GIS Data ReViewer will be logged in an error table using the ArcGIS Data ReViewer. The results of the visual QC and associated metrics will be summarized in the QC report.

When the data meets the acceptance criteria defined in the QA Plan, ESRI will submit the first data delivery to San Bernardino County for review. If the data does not meet the acceptance criteria defined in the QA Plan, the data delivery will be corrected, reviewed to ensure corrections have been made, and submitted to San Bernardino County for review. A QC report will accompany the data delivery.

A.5.3 Acceptance Criteria and Data Review Process

This section outlines the proposed preliminary acceptance criteria to be applied to the project deliverables and the data review process.

A.5.3.1 Acceptance Criteria Specifications

The following criteria (Table A-2) will be used as standard measures of data quality and acceptance for various aspects of the data. ESRI will achieve a 98 percent acceptance threshold for those items not specified as 100 percent.

Table A-2
Data Acceptance Thresholds

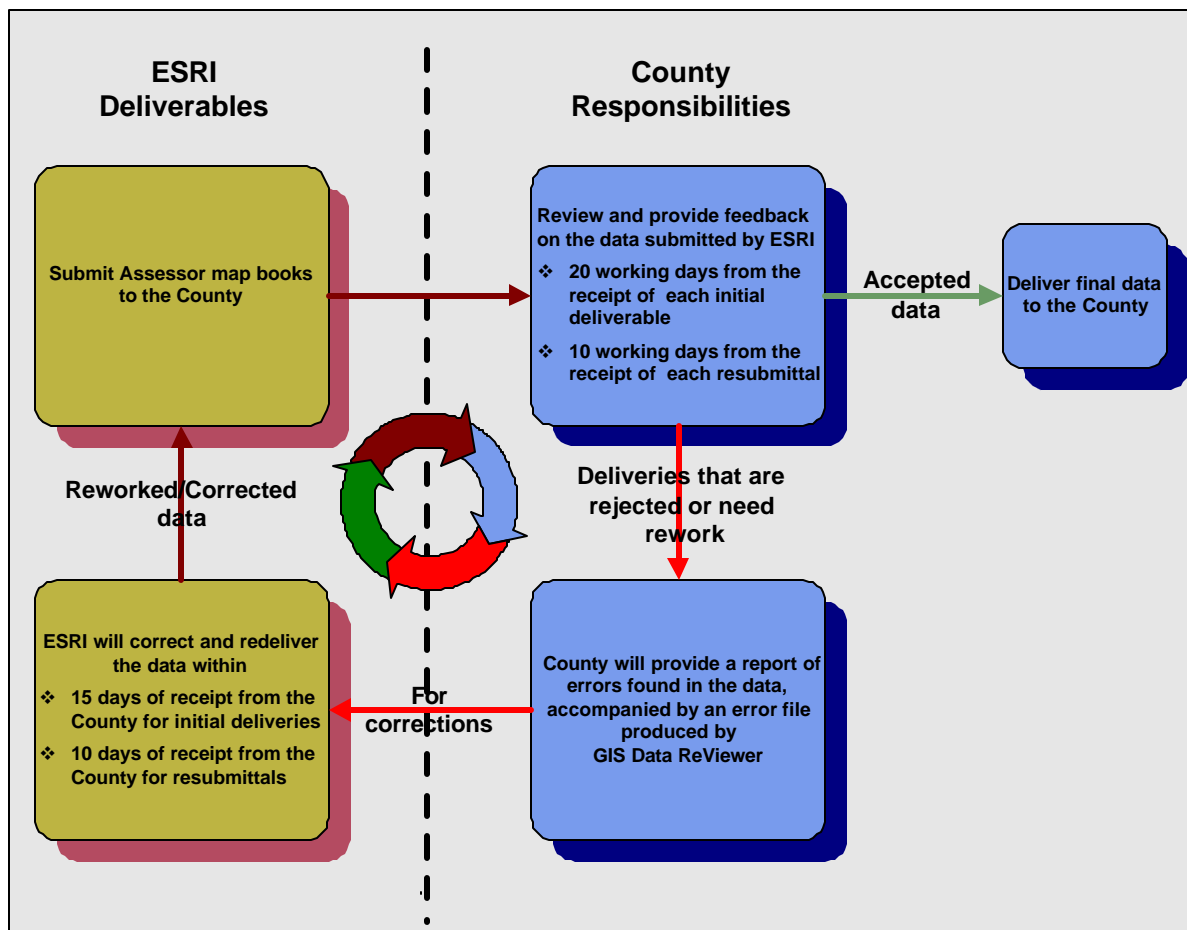
Item	Acceptance Threshold
Projection, Coordinate System, and Coordinate Precision	100%
Maintain Survey Control	100%
Metadata Structure Completeness	100%
Plot Files Provided for Assessor Map Pages	100%
Book Directory Existence	100%
Coverage Existence	100%
Coverage File Existence	100%
INFO File Existence	100%
Missing Records Check	100%
Topology Checks	100%
APN Attribute Accuracy—assumes data provided by County is correct	100%
Valid Code Frequency Check	100%
Value Range Check	100%
Populated Item Check	100%
Consistency Check	100%
Data Content—nonparcel features and annotation	98%

Check-In to Control, Closure, and Error Reports	Based on accuracy of source data
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A.5.3.2 Data Review Process

Figure A-11 depicts the data review cycle for the production phase of the project.

Figure A-11
Data Review Cycle



- ESRI will make incremental deliveries of parcel data for Assessor map books or groups of map books according to the delivery priorities to be established during the pilot project phase of the project. These incremental deliveries will consist of all deliverables specified in Sections A.1.4.4 and A.2.
- The County will have 20 working days from the receipt of each deliverable to review the data and provide feedback to ESRI. Each deliverable will be classified as accepted, accepted with rework, or rejected according to the acceptance criteria.

- For deliveries that are accepted with rework or rejected, the County will provide a report of errors found in the data, preferably accompanied by an error file produced by GIS Data ReViewer. ESRI will correct the data within 15 working days of receipt from the County and redeliver the data with associated reports.

Please note that the ESRI team commits to correcting any errors identified by the County during its initial QC review including errors that fall within the threshold of acceptable errors as outlined above in Section A.5.3.2.

- Following resubmittal of corrected data, the County will provide notification of acceptance or rejection within 10 working days. Should the data be rejected a second time, ESRI will make the required corrections and resubmit the data within 10 working days.

A.6 Assumptions

This section presents a variety of assumptions that are applicable to the scope of work.

- ESRI staff will work on site at the County a minimum of 20 hours per week during the project. The County will provide a workspace and telephone for the use of the on-site staff, as well as other equipment and materials, including a computer. At the County's direction, the work site staffing requirement may be reduced or eliminated during the course of the project if it determined by the County that the original level of support is no longer necessary.
- The estimated number of parcels to be automated is approximately 480,000. Should the actual number of parcels automated exceed the estimated number by more than 1% (4,800 parcels), ESRI will be entitled to seek additional funding from the County for the number of parcels that exceed the 1% threshold.
- Approximately 170,000 partially completed parcels require the addition of Assessor annotation and line work. All source data for the 170,000 parcels will be provided as completed Assessor map books that have been assembled, edgematched, and adjusted. ESRI's responsibility will be limited to adding Assessor features to the 170,000 partially-completed parcels. Should the actual number of parcels requiring the addition of Assessor features exceed the estimated number by more than 2% (3,400 parcels), ESRI will be entitled to seek additional funding from the County for the number of parcels that exceed the 2% threshold.
- ESRI assumes that the digital image data to be provided by the County, including scans of tract and parcel maps (TIFF) and Assessor map page images (PDF), are of suitable resolution and image quality so that all relevant linework and text will be legible on the image. Images that are of inadequate quality will be reported to the County and the County will be responsible for replacing the problem images with images of acceptable quality.
- The County recognizes that the desired degree of accuracy may not be feasible in certain non-urban areas of the County. In these areas it is likely that it will be necessary to apply alternative methodologies and accuracy thresholds. ESRI will work closely with the County to identify these areas and to make adjustments to the conversion methodology and accuracy requirements where necessary. The County acknowledges that flexibility will be shown with regard to the accuracy specifications for non-urban areas.

- ESRI will perform the work on this project based on source maps and data provided by the County, but will not attempt to resolve discrepancies in the legal interest in land. ESRI's scope of work will not include research into property records to resolve such discrepancies. The source documents provided by the County will be considered authoritative and will be used by the ESRI team to complete the parcel mapping effort.
- In conjunction with the pilot project, the ESRI team will conduct an assessment of the mapping control provided by the County to determine its adequacy for the Parcel Mapping Project. This assessment will include a thorough review of all control-related information provided by the County, the availability and density of control throughout the County, and the types of control points (GPS vs. conventionally surveyed) provided. ESRI will present the results of this assessment to the County and will identify any weaknesses in the control network that require remediation. The mechanism for resolving control issues is outlined in Section A.3.2 above.

A.7 Project Schedule

The baseline schedule for the Parcel Mapping Project is provided in a Microsoft Project printout included as part of this scope of work. The project will begin in March 2003 and will be completed by March 31, 2005.

The schedule reflects the three project phases identified in the project work plan outlined in Section A.4 of the scope of work; project initiation, parcel database pilot project, and County-wide parcel database development. The project initiation phase will occur during March–May 2003. The parcel database pilot project will take place from March–July 2003. Full database development is expected to be authorized by the County in early July 2003 and will begin immediately. The duration of the full production phase is proposed as approximately 18 months, beginning with a mobilization phase during which ESRI would ensure that all technical procedures and tools were disseminated to its team and all management tools would be configured and made fully operational.

The schedule reflects the County's desire to accelerate work on the addition of Assessor features to the partially-completed parcels. Since this effort is expected to be straightforward, it will begin in parallel with the pilot project for automation of new parcels. To ensure that the work is being done to specifications, the first delivery of Assessor features will be treated as a pilot project.

The portion of the schedule under the heading of "Countywide Parcel Database Development Phase" presents a broad outline of the production phase of the project. A more detailed production schedule that identifies specific production units based on Assessor books will be defined early in the project.

San Bernardino County/Parcel Basemap Completion Project
Exhibit A, Scope of Work

D	Task Name	Duration	Start	Finish	Mar '03	Apr '03	May '03	Jun '03	Jul '03	Aug '03	Sep '03	Oct '03	Nov '03	Dec '03	Jan '04	Feb '04	Mar '04	Apr '04	May '04	Jun '04	Jul '04	Aug '04	Sep '04	Oct '04	Nov '04	Dec '04	Jan '05	Feb '05	Mar '05	Apr '05
1	Project Initiation Phase	31 days	Wed 04/24/03	Wed 04/24/03																										
2	Project Start Date	0 days	Wed 03/27/03	Wed 03/27/03																										
3	Kickoff Meeting	1 day	Wed 03/27/03	Wed 03/27/03																										
4	Deliver Kickoff Meeting Summary	0 days	Wed 03/27/03	Wed 03/27/03																										
5	Prepare Draft Project Management Plan	10 days	Thu 03/27/03	Wed 04/02/03																										
6	County Review of Draft Project Management Plan	5 days	Thu 03/27/03	Wed 04/02/03																										
7	Prepare Final Project Management Plan	10 days	Thu 04/03/03	Wed 04/16/03																										
8	Prepare Quality Assurance Plan	15 days	Thu 04/03/03	Wed 04/23/03																										
9	County Review of Draft Quality Assurance Plan	5 days	Thu 04/03/03	Wed 04/23/03																										
10	Finalize Draft Quality Assurance Plan	10 days	Thu 04/10/03	Wed 04/23/03																										
11	Finalize Draft Quality Assurance Plan	54 days	Thu 04/10/03	Tue 06/11/03																										
12	Parcel Basemap Pilot Project Phase	17 days	Thu 04/10/03	Fri 04/18/03																										
13	Pilot Project - Requirements	2 days	Thu 04/10/03	Fri 04/18/03																										
14	Conversion Requirements Review Meeting	2 days	Thu 04/10/03	Fri 04/18/03																										
15	Prepare Data Review Requirements Summary	10 days	Mon 04/14/03	Fri 04/25/03																										
16	County Review of Draft Conversion Requirements Document	5 days	Mon 04/14/03	Fri 04/25/03																										
17	Pilot Project - Data Review	40 days	Mon 04/14/03	Fri 05/23/03																										
18	Develop Pilot Procedures and Tools	20 days	Mon 04/14/03	Fri 05/02/03																										
19	Platform Pilot Project for New Parcel Automation	20 days	Mon 04/14/03	Fri 05/02/03																										
20	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
21	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
22	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
23	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
24	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
25	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
26	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
27	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
28	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
29	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
30	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
31	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
32	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
33	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
34	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
35	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
36	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
37	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
38	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
39	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
40	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
41	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
42	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
43	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
44	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
45	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
46	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										
47	Platform Pilot Project for New Parcel Automation	35 days	Mon 04/14/03	Fri 05/09/03																										

San Bernardino County/Parcel Basemap Completion Project
Exhibit A, Scope of Work

ID	Task Name	Duration	Start	Finish	Q1 '03	Q2 '03	Q3 '03	Q4 '03	Q1 '04	Q2 '04	Q3 '04	Q4 '04	Q1 '05	Q2 '05	Q3 '05	Q4 '05
48	SB County Verification	100 days	Wed 1/8/03	Tue 1/27/04												
49	Administration of 180,000 Item Parcels	425 days	Wed 01/29/03	Tue 03/15/05												
50	Automation	275 days	Wed 01/29/03	Tue 08/17/04												
51	ESRI Quality Control	275 days	Wed 08/19/03	Tue 05/26/04												
52	Corrections and Verification	275 days	Wed 08/19/03	Tue 10/13/04												
53	SB County Quality Control	300 days	Wed 08/26/03	Tue 12/14/04												
54	Corrections and Verification	300 days	Wed 11/26/03	Tue 01/19/05												
55	SB County Verification and Acceptance	300 days	Wed 12/17/03	Tue 02/08/05												
56	Database Loading	300 days	Wed 01/21/04	Tue 03/15/05												

CHANGE ORDER

Date of Request	_____	Category	<input type="checkbox"/> Annotation	<input type="checkbox"/> Data Model
		<input type="checkbox"/> Meta Data	<input type="checkbox"/> Reports	<input type="checkbox"/> Data Exch.
		<input type="checkbox"/> QC	<input type="checkbox"/> Project Web site	
Change Title	_____			
Requester Name	_____			
Date Needed	_____			
Description (<i>may attach additional sheets</i>)	_____ <input type="checkbox"/> Attachment			
Item(s) Affected	<input type="checkbox"/> Tables	<input type="checkbox"/> Deliverable(s)	<input type="checkbox"/> Schedule	
Conversion Required	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Project Impact	<input type="checkbox"/> None	<input type="checkbox"/> Minor (minimal cost/no time delay)	<input type="checkbox"/> Some (minimal cost/up to five day project delay)	<input type="checkbox"/> Major (+\$10,000/up to one month project delay)
Explanation				
Risk Assessment	<input type="checkbox"/> Low (98% confidence in Project Impact)	<input type="checkbox"/> Minimal (95% confidence in Project Impact)	<input type="checkbox"/> Significant (Less than 95% confidence in Project Impact)	
Explanation				
Project Manager Approval to submit	_____			
	Signature		Date	

ESRI Response	
Hours Estimate _____	Cost Estimate _____
Estimated Completion Date _____	<input type="checkbox"/> No Cost, covered by Scope of Work
	<input type="checkbox"/> Supporting Documentation Attached
Signature _____	Date _____

COUNTY Acceptance	
<input type="checkbox"/> Cost Estimate Accepted	<input type="checkbox"/> Change Order Withdrawn
Signature of Project Leader _____	Date _____
Comments:	
Completion of Work	
<input type="checkbox"/> Accepted	
Signature of Project Leader _____	Date _____
Comments:	